Welcome

For the second time we have the pleasure of welcoming you to a symposium dedicated to the areas of cancer rehabilitation, late effects and survivorship. Welcome to the 10th Acta Oncologica Symposium entitled European Cancer Rehabilitation & Survivorship Symposium taking place in Copenhagen, Denmark from 17 to 18 September 2012.

Compared to the program in 2010 (at the 8th Acta Oncologica Symposium: Nordic Cancer Rehabilitation Symposium 2010) this year’s symposium covers all Europe and new areas of cancer survivorship. This year we have attracted even more international speakers, who will present their own research and their look into the future in the light of the rapidly changing demography and need for empirically based care of cancer survivors. Also, we have added parallel sessions, accepted more poster presentations and given you the opportunity to participate in educational workshops. The fact that more than 125 participants have registered for the workshops and more than 370 participants have registered for the symposium is illustrating the need for more development and training in the areas of cancer rehabilitation and survivorship. Our intention is to continue our bi-annual meetings reaching out to all clinicians, researchers and health administrators interested and engaged in the challenges of conducting meaningful rehabilitation and survivorship care for the millions of cancer survivors in Europe.

For now we welcome you to Copenhagen. We hope that this symposium will inspire you and enable you to improve and develop the field in which you work. Enjoy your visit to the capital of Denmark!

Best regards,

The Organizing Committee
European Cancer Rehabilitation & Survivorship Symposium (ECRS) 2012 is the 10th Acta Oncologica Symposium. The symposium is held in Copenhagen 17-18 September 2012.


The symposium is organized by Acta Oncologica & The Danish Cancer Society.

Organizing Committee

Agnes Smaradottir (IS) MD, Attending physician at the Department of Medical Oncology at Landshospitali University Hospital in Reykjavik, Iceland.

Bo Andreassen Rix (DK) MD, PhD, Head of the documentation and development section, Patient Support and Community Activities, The Danish Cancer Society, Denmark.

Carol Tishelman (SE), RN, PhD, Professor of Nursing, at the Department of Learning, Informatics, Management and Ethics at Karolinska Institutet, Sweden and at Stockholms Sjukhems Foundation Research & Development Unit in Stockholm, Sweden and at LaTrobe University, Victoria, Australia.

Christoffer Johansen (DK) Professor, MD, PhD, DSc (Med), Head of research, Unit of Survivorship, Danish Cancer Society Research Center, Denmark.

Dorte Gilså Hansen (DK) MD, PhD, Head of National Research Center of Cancer Rehabilitation, Institute of Public Health, University of Southern Denmark; Senior researcher at the Research Unit of General Practice, University of Southern Denmark, Denmark.

Jeanette Falck Winther (DK) MD, DSc (Med), Senior researcher, Unit of Survivorship, Danish Cancer Society Research Center, Denmark.

Jon Håvard Loge (NO) MD, PhD, Senior researcher at the National Resource Centre for late Effects after Cancer Treatment at the Oslo University Hospital; Professor II at the Department of Behavioral Sciences in Medicine at the University of Oslo, Norway.

Liisa Pylkkänen (FI) MD, PhD, Chief Medical Officer, Cancer Society of Finland, Finland.

Pernille Envold Bidstrup (DK) MSc in psychology, PhD, Unit of Survivorship, Danish Cancer Society Research Center, Denmark.

Susanne Oksbjerg Dalton (DK), MD, PhD, Senior researcher, Unit of Survivorship, Danish Cancer Society Research Center, Denmark.
Symposium Information

Venue
Tivoli Hotel & Congress Center
Arni Magnuusons Gade 2
1577 Copenhagen V • Denmark
Tel. + 45 44 87 00 00
http://www.tivolicongresscenter.com/

Official website:
www.cancer.dk/ecrs

Information/registration desk
If you have any questions, you are always welcome to contact us at the
Information/registration desk in the lobby at Tivoli Hotel & Congress
Center (address above).

Internet at the venue
You are welcome to use the free Wi-Fi at the Tivoli Hotel & Congress
Center. The password is tivolihotel.

Poster presentations
Please, make sure that your poster is in position by the poster number
before the Poster Session begins at 14:15, Monday 17 September 2012.
Also note that the posters must be taken down by the end of the
symposium on Tuesday 18 September 2012 at 16:00. The Poster Ses-
session will take place in the lobby at the Tivoli Hotel & Congress Center.
During the Poster Session we encourage all participants to look through
the posters presented, to engage in discussion with the authors, and to
nominate the three best posters in terms of scientific as well as presenta-
tion quality. The three best posters will be announced at the Sympo-
sium Dinner.

Oral presentations
Our technician will assist you in uploading your ppt. presentation either
on Monday, 17 September 2012 between 8:00-10:00 or Tuesday, 18
September 2012, between 10:45-11.15 in the Tivoli Congress Hall.

Symposium Dinner
The Symposium Dinner will take place in the restaurant at Tivoli Hotel
& Congress Center Monday, 17 September 2012 at 19:00. Note that
you can only participate if you have registered for the event.

Language
The official language of the symposium is English.

Symposium Secretariat
Anne Nistrup
&
Gro Samsø Bastian

Telephone number: +45 35 25 76 45
Mobile number: +45 51 89 74 01
Email: ecrs@cancer.dk
Danish Cancer Society Research Center
Strandboulevarden 49
2100 Copenhagen
Denmark
General Information

Transport to the city center
Tivoli Hotel & Congress Center is situated in the centre of Copenhagen, within walking distance of the city’s sights and attractions. If you need directions, please ask at the information desk. We will be happy to help you.

Transport to the airport
Walk 8-10 minutes to Copenhagen Central Station from where you can take the train directly to Copenhagen Airport Terminal 3. This will cost approx. DKK 36.
Taking a taxi to the airport will cost approx. DKK 280. All taxis are metered and accept all major international credit cards.

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ECRS 2012 Symposium: Monday 17 September 2012

8.00-10.00 Registration and light breakfast

10.00-10.15 Welcome Remarks
Room: Tivoli Congress Hall
10.00-10.10 Christoffer Johansen (DK): Head of the ECRS 2012 Organizing Committee
10.10-10.15 Leif Vestergaard Pedersen (DK): Leif Vestergaard Pedersen (DK), Chief Executive Officer at The Danish Cancer Society

10.15-11.00 Plenary Session 1: Rehabilitation and survivorship in the next decades – cancer and other chronic diseases
Room: Tivoli Congress Hall
10.15-10.30 1.1 Lisa Sengøløv (DK): Cancer treatment in the next decades – implications for rehabilitation
10.30-10.45 1.2 Mogens Lytken Larsen (DK): Cardiac Rehabilitation – How are we doing?
10.45-11.00 1.3 Knut Borch-Johnsen (DK): Diabetes mellitus; the impact of the “diabetes epidemic” and the improved survival on strategies for rehabilitation

11.00-11.15 Coffee Break

11.15-13.15 Lunch

11.15-11.45 Plenary Session 2: Depression and anxiety
Room: Tivoli Congress Hall
11.45-12.15 Plenary Session 3: The American perspective
Room: Tivoli Congress Hall
Catherine Alfano (US): Cancer Survivorship & Cancer rehabilitation: Building a new integrated model of survivorship care in the United States

12.15-14.15 Parallel Session 4.1: Cancer patients and their families
Room 1: Harlekin
13.30-13.45 4.1.2 Elisabeth Jepsen (NO): A Controlled Study of Teenagers’ Adaptation to Cancer in Their Fathers
13.45-14.00 4.1.3 Nina Rottmann (DK): Illness appraisal in couples affected by breast cancer – Cross-sectional results from a nationwide prospective cohort study in Denmark
14.00-14.15 4.1.4 Nanna Friðriksdóttir (IS): Sexual information and counseling needs among cancer outpatients and their significant others

13.15-14.15 Parallel Session 4.2: Rehabilitation services and patient needs
Room 2: Columbine
13.15-13.30 4.2.1 Chair: Dorte Gilså Hansen (DK): Patient needs and quality of life
13.30-13.45 4.2.2 Stinne Holm Bergholdt (DK): A randomised controlled trial on improving general practitioners’ services in cancer rehabilitation: Impact on general practitioners’ proactivity and on patients’ participation in rehabilitation activities
13.45-14.00 4.2.3 Maria Hellbom (SE): The Regional Cancer Centre South cancer rehabilitation project. Implementing a workable model for the cancer care process
14.00-14.15 4.2.4 Astrid Giøelle Veloso (DK): Meeting cancer patients’ needs of rehabilitation – a patient survey

13.15-14.15 Parallel Session 4.3: Return to work
Room 3: Pjørret
13.15-13.30 4.3.1 Chair: Alv A. Dahl (NO): What make long-term testicular cancer survivors stay at work?
13.30-13.45 4.3.2 Lise Kronborg (DK): Changes in working ability and sports activity related to treatment modalities and long-term symptoms among women treated for breast cancer
13.45-14.00 4.3.3 Sigrun Dahl (NO): Work ability patterns after open and robotic-assisted laparoscopic radical prostatectomy among men aged <65 with prostate cancer
14.00-14.15 4.3.4 Trine Allerslev Horsbøl (DK): Return to work for survivors from haematological cancer: A register-based cohort study

14.15-16.00 Coffee break & Poster session

14.15-16.00 Parallel Session 4.4: The continuum of survivorship
Room 1: Harlekin

14.15-14.15 Parallel Session 4.5: Return to work
Room 2: Columbine

16.00-16.30 Plenary Session 5: A gender perspective
Room: Tivoli Congress Hall
Karín Bergmark (SE): Rehabilitation needs and side effects from a gender perspective

16.30 -17.00 Plenary Session 6: The continuum of survivorship
Room: Tivoli Congress Hall
Martin Härter (DE): Long-term effects of cancer - consequences for supportive and palliative care integrating rehabilitation requirements

19.00- Symposium Dinner & Poster Award
ECRS 2012 Symposium: Tuesday 18 September 2012

08.30-09.30 Plenary Session 7: Screening
Room: Tivoli Congress Hall
08.30-09.00 7.1 James Coyne (US): The case against screening cancer patients for distress
09.00-09.30 7.2 Alex Mitchell (UK): Screening cancer patients for distress: What does the evidence from 31 studies actually show?

09.30-09.45 Coffee Break

09.45-10.45 Plenary Session 8: Comorbidity and ageing
Room: Tivoli Congress Hall
09.45-10.15 8.1 Lodovico Balducci (US): Rehabilitation of older cancer patients
10.15-10.45 8.2 Sophie Fosså (NO): Cancer and ageing

10.45-11.15 Coffee Break

11.15-12.15 Parallel Session 9.1: Late effects
Room 1: Harlekin
11.15-11.30 9.1.1 Chair: Sanne Schagen (NL): Chemo brain
11.30-11.45 9.1.2 Olga Husson (NL): Health-related quality of life and disease specific symptoms among (long-term) thyroid cancer survivors: A study from the population-based PROFILES registry
11.45-12.00 9.1.3 Gabriela Armaund (SE): Fertility-related distress and health-related quality of life among female and male cancer survivors
12.00-12.15 9.1.4 Ceciee Sperling (DK): The impact of comorbidity on the survival of ovarian cancer patients: A register-based cohort study from a national clinical

11.15-12.15 Parallel Session 9.2: Cancer in child- and young adulthood
Room 2: Columbine
11.15-11.30 9.2.1 Chair: Louise Von Essen (SE): Psychological consequences of childhood cancer for the children and the parents
11.30-11.45 9.2.2 Jeanette Falck Winther (DK): Reproductive Consequences of Cancer Treatment in Childhood
11.45-12.00 9.2.3 Ellen Karine Grov (NO): A controlled study of attachment patterns in survivors of childhood lymphomas
12.00-12.15 9.2.4 Randi Reidunsdatter (NO): “Meeting reality” – Young cancer survivors experiences with re-entering everyday life after cancer treatment

11.15-12.15 Parallel Session 9.3: Physical Activity I
Room 3: Pierrot
11.15-11.30 9.3.1 Chair: Lee Jones (US): Exercise-Oncology Research: Current Status and Future Directions
11.30-11.45 9.3.2 Anna Enblom (SE): Level of physical, leisure, and daily living activities in cancer patients undergoing radiotherapy: Which patients will need additional support?
11.45-12.00 9.3.3 Andreas Holst Andersen (DK): A modified exercise protocol may promote continuance of exercise after intervention in lung cancer patients
12.00-12.15 9.3.4 Randi Reidunsdatter (NO): Fatigue after breast cancer may be related to conditions other than the cancer: The impact of comorbidity is essential

12.15-13.15 Lunch
13.15-14.15 Parallel Session 10.1: Physical Activity II
Room 1: Harlekin
13.15-13.30 10.1.1 Chair: Lis Adamsen (DK): Comprehensive Rehabilitation in Cancer Patients – From Diagnosis, along the Cancer Treatment Trajectory and into Society: A Copenhagen Research Programme
13.30-13.45 10.1.2 Julie Midtgaard (DK): Efficacy of a Pragmatic 12-month Exercise Rehabilitation Program in Post Therapy Cancer Survivors: A Randomized Controlled Trial
13.45-14.00 10.1.3 Katarzyna Hojan (PL): The impact of physical activity on association between changes in body build and quality of life in breast cancer women undergoing endocrine therapy
14.00-14.15 10.1.4 Wilma Kuijpers (NL): A systematic review of web-based interventions for patient empowerment and physical activity in chronic diseases: Relevance for cancer survivors

13.15-14.15 Parallel Session 10.2: Cancer survivors’ perspectives
Room 2: Columbine
13.15-13.30 10.2.1 Chair: Laura Barnett (UK): Surviving Intensive Care
13.30-13.45 10.2.2 Chair: Mette Terp Højbye (DK): Healing Environments in Cancer Survivorship
13.45-14.00 10.2.3 Lene Seibaek (DK): Hoping for the best, preparing for the worst. The lived experiences of women undergoing ovarian cancer surgery
14.00-14.15 10.2.4 Mette Moustgaard Mathiesen (DK): Rehabilitation of endometrial and cervical cancer patients: A study of needs and priorities

13.15-14.15 Parallel Session 10.3: Social inequality
Room 3: Pjerrot
13.15-13.30 10.3.1 Chair: Kristina Alexanderson (SE): Cancer and health, disease, work capacity, and sickness absence – does this vary with social status?
13.30-13.45 10.3.2 Lise Vilstrup Holm (DK): Social inequality in cancer rehabilitation: A population-based cohort study
13.45-14.00 10.3.3 Beate Hauglann (NO): Patterns of employment, sick-leave, disability pension and income after colorectal cancer – a controlled cohort study on work ability
14.00-14.15 10.3.4 Anne Kari Hersvik Aarstad (NO): GHQ scores predict uniquely subsequent survival in successfully treated head and neck cancer patients: a prospective cohort study

14.15-14.45 Coffee Break

14.45 -15.35 Plenary Session 11: Integrating follow-up, late effects treatment & rehabilitation
Room: Tivoli Congress Hall
14.45-15.10 11.1 Jane Maher (UK): The cost of success dealing with the consequences of cancer treatment
15.10-15.35 11.2 Carol Tishelman (SE): Symptom Experiences: A critical discussion about definition, assessment, and research practice

15.35 -16.00 Perspectives
Room: Tivoli Congress Hall
Christoffer Johansen (DK)
Adamsen, Lis (DK) RN & MSC in Sociology, PhD, Professor
Lis Adamsen is professor at Dept. of Public Health, Copenhagen University and head of the University Hospitals Centre for Nursing and Care Research (UCHC). Leader of the interdisciplinary Body & Cancer research team. Since 2011 head of the centre CIRE - Centre of Integrated Rehabilitation of Cancer Patients. Actual research programme ‘Comprehensive Rehabilitation in Cancer Patients – From Diagnosis, along the Cancer Treatment Trajectory and into Society’. The program includes eight intervention studies and is based on three principles: early initiation - at diagnosis, physical activity and patient activation. Her special areas of interest are exercise as a supportive physical, emotional and social strategy for cancer patients with different diagnosis during and after treatment.

Alexanderson, Kristina (SE) Professor
Kristina Alexanderson is professor at the Division of Insurance Medicine, Dept. of Clinical Neuroscience, Karolinska Institutet, Stockholm. Here she also leads an interdisciplinary research group. The last 20 years she has conducted research mainly on different aspects of sickness absence and disability pension (in general and with specific diagnoses, including cancer), such as 1) risk factors for sick leave or disability pension 2) consequences of being sickness absent or disability pensioned, 3) factors that hinder and promote return to work, 4) sickness certification practices, and 5) methods and theories within this research area.

Alfano, Catherine (US) PhD
Catherine M Alfano is the Deputy Director of the National Cancer Institute’s Office of Cancer Survivorship. Dr. Alfano earned her PhD in clinical psychology with an emphasis in behavioral medicine from the University of Memphis. She completed her residency in clinical rehabilitation psychology at the University of Washington Medical Center. Following her residency, she completed a clinical fellowship in psycho-oncology at the Seattle Cancer Care Alliance as well as an NCI-funded post-doctoral research fellowship in Biobehavioral Cancer Prevention and Control at the Fred Hutchinson Cancer Research Center & the University of Washington. Dr. Alfano’s research interests focus on transdisciplinary cancer rehabilitation and survivorship. Specifically, her research aims to promote healthy behavior change in survivors including physical activity, healthy diets, stress management, and smoking cessation; develop and test interventions that prevent or ameliorate the chronic and late effects of cancer and treatment; and determine the biobehavioral interrelationships between cancer-related symptoms, healthy behaviors, energy balance, and immune and endocrine functioning which may influence cancer prognosis.

Balducci, Lodovico (US) MD, Professor
Lodovico Balducci is Program Leader of the Senior Adult Oncology Program and Medical Director of Affiliates & Referring Physician Relations at H. Lee Moffitt Cancer Center & Research Institute, and Professor of Oncologic Sciences, University of South Florida College of Medicine, Tampa, Florida. Dr. Balducci's clinical research activities include cancer and aging management of the frail elderly, assessment of quality of life in the older cancer patient, prognostic assessment of the older cancer patient, and interactions of comorbidity and function in the older cancer patient. Dr. Balducci is board certified in Medical Oncology/Hematology. He is a member of the American Geriatrics Society, the American Society of Clinical Oncology, American Association for Cancer Research, American Society of Hematology, American College of Breast Disease, and a fellow of the American College of Physicians.

Barnett, Laura (UK) MA in Existential Psychotherapy
Laura Barnett is an existential therapist working as psychotherapist, supervisor, consultant and trainer in the NHS. She has been working with people affected by a diagnosis of cancer since 1997, after setting up, in a South London Hospital, a cancer counseling service for cancer patients and their relatives. Her special area of interest is working with patients who have survived Intensive Care. She is the editor of When Death Enters the Therapeutic Space, existential perspectives in psychotherapy and counselling (Routledge 2009), and co-editor, with Greg Madison, of a major anniversary book on Existential Therapy, entitled Existential Therapy: Legacy, Vibrancy and Dialogue (Routledge 2012).

Bergmark, Karin (SE) MD, PhD
Karin Bergmark is a senior consultant in gynaecologic oncology at the Department of Oncology, Sahlgrenska University Hospital, Gothenburg, Sweden. Previously she worked at the Karolinska University Hospital in Stockholm, and still carry on research at the Karolinska Institute. Her research interests include late side effects of especially cervical cancer; specifically sexual dysfunction, but also lymphoedema, and bowel and urinary dysfunction after pelvic radiotherapy. She is head of a cancer rehabilitation unit at Sahlgrenska University Hospital focusing on rehabilitation after pelvic radiotherapy.

Borch-Johnsen Knut (DK) Professor, MD, DMSc
Since December 2010 Knut Borch-Johnsen has been Professor and director of Research at the Research Center for Quality in Health Care, Institute of Public Health, University of Southern Denmark. Prior to this he was Director of the Steno Diabetes Center for 11 years. His research focus has been Clinical Epidemiology related to diabetes and cardiovascular disease and more recently research related to optimization of Health Care. Knut Borch-Johnsen has been the Chair of the National Indicator Project for diabetes, and has served as member and chair of numerous national and international committees related to primary prevention, public health aspects and treatment organisation within diabetes and cardiovascular disease.
Keynote speakers

Coyne, James (US) MSc in Psychology, PhD, Professor
Jim Coyne is a clinical health psychologist and Professor at the Dept. of Psychiatry, University of Pennsylvania and Professor of Health Psychology, University of Groningen. He is the author of over 350 publications including numerous citation classics, and he has been identified by the Institute for Scientific Information Web of Science as one of the most cited psychologists and psychiatrists in the world. His diverse areas of research include stress and coping, depression, individual and couples’ adaptation to cancer, screening for distress and depression, and evidence-based clinical and health psychology.

Dolbeault, Sylvie (FR) MD, PhD, Psychiatrist
Sylvie Dolbeault is MD, PhD, psychiatrist since 1993 and has been working for the last 15 years at the National Cancer Centre in Paris, Cuné Institute. She earned her doctorate in neurosciences in 2009 and has since 2004 been the head of the Interdisciplinary Supportive Care Dept., which integrates psycho-oncology, palliative care, social work, nutrition, rehabilitation, addiction and oncogeriatrics. Dolbeault is working on different research fields such as distress, psycho educational interventions, ontogenetic, quality of life and communication in cancer care. She is representing the Psycho-Oncology Research Group in the Cancéropole of Paris. She is an active member of the French Psycho-Oncology Society, of the board of directors of the International Psycho-Oncology Society as well as a member of the editorial committee of Psychiatry and Palliative Care Medicine and the Francophon Journal of Psycho-Oncology.

von Essen, Louise (SE) MSc in Psychology, Professor
Louise von Essen is a psychologist, professor at the Department of Public Health and Caring Sciences and guest professor at the Dept. of Psychology, Uppsala University. Her group is involved in internationally strong research in translational care sciences and personalized health care, especially within the field of pediatric oncology. From 2010 on the group hosts the U-CARE Program (Uppsala University Psycho-social Care Program), a strategic research initiative (www.u-care.uu.se). Within the U-CARE Program the goal is to move psychological health discoveries into clinical practice.

Fosså, Sophie D. (NO) MD, PhD
For 40 years Sophie D. Fosså has been working at the Norwegian Radium Hospital as a Medical oncologist and radiotherapist. The last 15 years she has been chairperson of the National Resource Centre for longterm studies after Cancer. Sophie D. Fosså has published widely in the international literature and has approx. 500 publications on PubMed. She is especially interested in urological oncology and has done thorough research on testicular cancer.

Hansen, Dorte Giliså (DK) MD, PhD
Since 2009 Dorte Giliså Hansen has been Head of the National Research Center of Cancer Rehabilitation Research, University of Southern Denmark. Furthermore she is a Senior Researcher at the Research Unit for General Practice, University of Southern Denmark, Chair of the Danish psycho-oncology and supportive care section and a member of the Danish Radiotherapy Interest Group. She has long and broad experience as a researcher and supervisor for PhD students.

Heinrichs, Nina (DE) MSc in Psychology, PhD, Professor
Dr. Heinrichs is Professor of Clinical Child and Adolescent Psychology and Psychotherapy and Director of the University Outpatient Clinic for Children, Adolescents and Their Families at the University of Bielefeld, Germany. Dr. Heinrichs has worked as a researcher and practitioner in a variety of clinical settings in Germany and abroad, among them the Center for Anxiety and Related Disorders at Boston University (adult mental health), the Parenting and Family Support Centre at the University of Queensland (child mental health and parenting), and the Cancer Support Centre (cancer and couples). She has published in the area of anxiety disorders in children and adults, and in prevention and early intervention with children and couples who face threats to their physical or psychological health. She was awarded the German Association of Psychology Division of Clinical Psychology and Psychotherapy Early Career Award for her research and clinical innovation in the field of Clinical Psychology and she was awarded the Helmut-Wölte Price for Psycho-Oncology for her research in couple-based interventions for women with breast cancer.

Härter, Martin (DE) Dipl Psych MD, PhD, Professor
Since 2008 Härter has been director of the Institute and Polyclinic for Medical Psychology at the University Medical Center Eppendorf in Hamburg. He is a licensed psychotherapist with clinical duties mainly in psycho-oncology at the University Medical Center Hamburg (www.uev-berlin.de). His main research interests are in somato-psychological comorbidity, epidemiology of mental disorders, patient involvement and shared decision-making as well as in general in health services research. He was from 2005-2009 coordinator of the German National Clinical Practice Guidelines for Depression and since 2008 he has been a member of the expert panel of the National Cancer Plan.

Høybye, Mette Terp (DK) MSc in anthropology, PhD
Mette Terp Høybye is an interdisciplinary researcher, encompassing diverse methods and scientific viewpoints from social anthropology and public health in her work. She holds a MSc in anthropology and PhD in health studies from the University of Copenhagen, the result of a large randomized, interdisciplinary anthropological and epidemiological study of the use of internet support groups in the rehabilitation of Danish cancer survivors. Dr. Høybye’s research has been concerned with the meaning effect and potential of social networks and the production of virtual spaces and self-technologies mediated by the internet for more than a decade. With particular empirical attention to exploring how cancer survivors might benefit from such networks in their rehabilitation process. Related to this, she has a strong interest in how technologies form the production of knowledge and open new potential for interventions and health behavior change. Currently, Dr. Høybye is conducting research into how cancer patients resonate and embody hospital space in the course of treatment, affiliated as a PostDoc. with the Institute of Public Health at the University of Southern Denmark.

Jones, Lee (US) Professor
Dr. Lee W. Jones is an Associate Professor in the Dept. of Radiation Oncology and Scientific Director of Cancer Survivorship at Duke Cancer Institute. Dr. Jones’s research program focuses on a translational approach to: (1) evaluate the cardiovascular / functional impact of cancer therapy, (2) develop the underpinnings and scope of evidence-based exercise training to prevent and/or treat dysfunction, and (2) elucidate the effects, and underlying systemic and molecular mechanisms, of defined aerobic training on tumor progression and metastatic dissemination. Lee Jones is a member of the International Editorial Board for Lancet Oncology. His research program is supported by the National Institutes of Health, American Cancer Society, and U.S. Dept. of Defense Breast Cancer Research Program.

Larsen, Mogens Lytken (DK) Professor, MD, DMSc, FESC, FACC
Professor Lytken Larsen is head of Dept. of Cardiology at Odense University Hospital. His main interest has been preventive cardiology, metabolic monitoring and cardiac rehabilitation with focus on secondary prevention and metabolic disorders. Lytken Larsen will be the president of The Danish Society of Cardiology from May 2012 and has been the chairman of the Danish working group for the most recent Danish cardiac rehabilitation programs. Since 2007 Lytken Larsen has been the head of Dept. of Cardiology at Odense University Hospital.

Maher, Jane (UK) Professor
Jane Maher has worked as a consultant clinical oncologist at Mount Vernon Cancer Centre for more than 20 years. Between 1986 and 1999 she developed both general oncology services for 5 separate hospitals and specialist head and neck cancer services for 3 health regions. Since 1999 she has focused her clinical activity on breast and advanced prostate cancer to enable her to work with Macmillan Cancer Support as Chief Medical Officer and with the NHS as a clinical leader most recently with NHS Improvement as a National Clinical Advisor for Aftercare and Survivorship. She has had a long term interest in consequences of cancer treatments. Her activity in this area includes chairing the Maher Committee for the Dept. of Health in 1995, leading the UK National Audit of Late Effects Pelvic Radiotherapy for the RCR in 2000 and most recently chairing NCSI Consequences of Cancer treatments committee.
Mitchell, Alex (UK) MRCPsych
Alex Mitchell is consultant in psycho-oncology at Leicestershire Partnership Trust; Honorary Senior Lecturer at the University of Leicester and maintains the website www.psycho-oncologyinfo.info. In 2009 he was co-editor of the book “Screening for Depression: An Evidence based Approach” from Oxford University Press. His research interests include the scientific approach to clinical diagnosis and improving quality of care. In 2009 he was awarded the Hiroomi Kawano New Investigator Award for best international researcher psycho-oncology.

Schagen, Sanne (NL) PhD
Sanne Schagen is a staff member/group leader in the Division of Psychosocial Research and Epidemiology at the Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital in Amsterdam. She is a registered health care psychologist and clinical neuropsychologist. Her primary research line is concerned with cognitive problems associated with cancer and its treatment. She conducts a range of interrelated studies in this area, including neuropsychological testing, the application of brain imaging techniques, experimental animal studies, and investigations of the perception and expression of psychosocial symptoms and coping with these symptoms. Some of her ongoing research projects are: Structural, biochemical and functional indices of chemotherapy induced cognitive deficits in cancer patients. Imaging of cognitive dysfunction in testicular and breast cancer survivors. Analysis and reduction of neurocognitive problems with brain radiation of cancer patients. An online testing approach to assess cognitive problems associated with cancer and cancer treatment. Molecular and cellular mechanisms of cognitive impairment following chemotherapy for cancer. Downsides of Being Well-Informed: Tracking and Preventing Chemotherapy-Related Cognitive Problems in Breast-Cancer Patients.

Sengeløv, Lisa (DK) MD, DMSc
Lisa Sengeløv is the chief physician at the Dept. of Oncology, Herlev Hospital. Prior to this, Lisa Sengeløv was a Senior Registrar also at the Dept. of Oncology, Herlev Hospital. She received her MD in 1988 and her Doctor of Medical Sciences in 2002. She is engaged in national and international research in oncological treatment of prostate and urothelial cancer. Lisa Sengeløv has published 41 articles in peer-reviewed journals and contributed with 60 posters and oral presentations at international meetings. She has been president of the Danish Society of Clinical Oncology and is a member of several national cancer societies.

Tishelman, Carol (SE) RN, PhD, Professor
Carol Tishelman was born and bred and educated as a RN in the US. She is presently Professor of Nursing at Karolinska Institutet, and presently leads the Cancer and Palliative Care section of a nationally-funded strategic research initiative linking Karolinska Institutet, Linnaeus University and clinical care providers. Carol also has part-time affiliations with the Research & Development Unit at Stockholms Sjukhem, which is one of Scandinavia’s largest palliative care facilities, and with University of Manchester School of Nursing, Midwifery and Social Work, and LaTrobe University in Melbourne Australia. She was active in initiating the first Nordic Society for Psychosocial Oncology and has worked nationally, regionally and internationally with to promote both better psycho-social and palliative care and research. In addition, she has worked extensively with a series of projects to better integrate cancer nursing practice development, education and research for improved patient care.
Abstracts

Plenary Session 1: Rehabilitation and survivorship in the next decades – cancer and other chronic diseases

Presentation number 1.1

Cancer treatment in the next decades – implications for rehabilitation

Key Note Speaker:
• Lisa Sengeløv, Department of Oncology, Herlev Hospital, Denmark

The increase in cancer treatment the last decade has been dramatic with a modest increase in survival rate. Extrapolation of this increase into the next decades will imply a multimodal treatment in most of the cancer patients. This will hopefully increase survival rates further, and increase the number of patients surviving with functional and psychological impairment after cancer treatment. The treatments will have reduced morbidity, and we need to refine the tool used to screen the patients, and make national based screening programs, to screen cancer survivors effectively. Treatment of morbidity has to be centralized, but individualized. We face a challenge with new areas of development.

Presentation number 1.2

Cardiac Rehabilitation – How are we doing?

Key Note Speaker:
• Mogens Lytken Larsen, Department of Cardiology, Odense University Hospital, Denmark

Cardiovascular disease is the leading cause of death and disability in most European countries. The recurrence rate of the disease is high and technical interventions are expensive. Therefore, cardiovascular prevention and rehabilitation is a cornerstone in the treatment of cardiovascular disease. However, in many countries only a minority of patients with cardiovascular disease i.e. after myocardial infarction or after revascularization procedures receive treatment. This is at least in part due to the fact that in many countries the number of facilities which offer this type of treatment is low, but moreover many hospitals also face problems with participation rates in rehabilitation programmes, and inequality in recruitment and participation among low educated and socially vulnerable has been observed. It is one of the aims of the European Society of Cardiology to improve this situation.

Presentation number 1.3

Diabetes mellitus; the impact of the “diabetes epidemic” and the improved survival on strategies for rehabilitation

Key Note Speaker:
• Knut Borch-Johnsen, Research Center for Quality and Health Care, Institute of Public Health, University of Southern Denmark, Denmark

From 1995 to 2011 the number of people diagnosed with diabetes has increased from 150,000 to 250,000, and this number will increase further in the years to come. Demographic changes in combination with increasing survival of patients with type 2 diabetes contributes strongly to this “diabetes epidemic”, but the same changes raise the need for a rethinking of the organization of care and rehabilitation of patients with diabetes. The presentation will focus on some of the strategies used in Denmark to cope with this challenge, and also focus on similarities and differences between diabetes and cancer in relation to which strategies can be applied.

Plenary Session 2: Depression and anxiety

Screening for patient’s distress and supportive care needs during the whole health trajectory: is it a way to answer to our patient’s psychological disorders?

Key Note Speaker:
• Sylvie Dolbeault, National Cancer Centre, Curie Institute, France

Care provided during the cancer trajectory must include management of disease symptoms, treatment of side effects and post-treatment sequelae, including screening and an appropriate response to psychological distress and unmet needs at each step of the treatment and rehabilitation period. Many screening designs have been tested in the last decade, searching for a personalized answer to each patient’s unique needs. Successful programs hinge on diverse competencies: eliciting sensitive and easy-to-use instruments, training health professionals, having an appropriate care organisation to refer patients presenting specific needs, being able to evaluate the global screening process. This also requires development of clinical guidelines allowing for the diffusion of good practices. In France, the National Plan Cancer gave us the opportunity to organize supportive care screening programs, seeking the fitting answer to patients needs. As an example, we will present a protocol, currently being implemented at Institut Curie, Paris, studying breast cancer patients’ needs at the end of treatment and up to one year after, and looking for predictors of unmet needs during this specific period of rehabilitation.

Plenary Session 3: The American perspective

Cancer Survivorship & Cancer rehabilitation: Building a new integrated model of survivorship care in the United States

Key Note Speaker:
• Catherine Alfano, National Cancer Institute, Office of Cancer Survivorship, USA

Increasing research and clinical attention focuses on the specialized needs of survivors of cancer after the conclusion of primary cancer treatment. This is a direct reflection of the growing number of survivors of cancer worldwide, their increased life expec-
The cancer diagnosis and its medical treatment is a stressful life-event that may pose formidable and enduring challenges, not only to the patient but also to their partner and family. A conjoint process of mutual support has been suggested to be an effective coping strategy. In recent years there has been increasing interest in studying these processes and in developing family-based psychosocial interventions for cancer patients and those caring for them. The talk will briefly illustrate an intervention and the results of two studies investigating the effects of this couple-based intervention. In the first study, couples were recruited around the time of initial cancer diagnosis. In the second study, couples were recruited after the medical treatment had been fully completed. In both studies, an active control group was employed. Results will be shown and their implications for psychosocial interventions with couples discussed.
Illness appraisal in couples affected by breast cancer – Cross-sectional results from a nationwide prospective cohort study in Denmark

Speaker:
• Nina Rottmann, National Research Center of Cancer Rehabilitation, Research Unit of General Practice, Institute of Public Health, University of Southern Denmark, Denmark
• Anne Nicolaisen, National Research Center of Cancer Rehabilitation, Research Unit of General Practice, Institute of Public Health, University of Southern Denmark, Denmark
• Henrik Flyger, Department of Breast Surgery, Herlev Hospital, Herlev, Denmark
• Manel Hagedoorn, Health Sciences / Health Psychology, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands

Purpose: A patient’s experience of breast cancer may depend on her intimate partner who often provides emotional and instrumental support. Patient and partner may differ in their illness appraisal, i.e. how they perceive the breast cancer and to which extent they view it as shared. The purpose of this study is to analyze illness appraisal of patients and partners, and to examine whether congruence in the couple’s illness appraisal and the partner’s understanding of the patient’s view are associated with patient’s psychological adjustment.

Methods: Based on the clinical database of the Danish Breast Cancer Cooperative Group (DBCG) a nationwide, population-based cohort of women diagnosed with breast cancer and their cohabiting male partners is being established (inclusion period 07/2011-08/2012). Self-reported questionnaire data on individual and dyadic adjustment are collected at baseline (following diagnosis), at 5 and at 12 months after. Data for the present investigation include illness perceptions (Brief-IPOQ), shared stressor appraisal, depressive symptoms (CES-D), and relationship quality (Cantril’s ladder) at baseline. Analyses will be adjusted for clinical characteristics of the breast cancer.

Results: We expect to collect baseline questionnaires from about 800 couples (participation rate of approximately 35%). Results will be ready for presentation at the symposium. We hypothesize that couple congruence in illness appraisal and the partner understanding the patient's view are associated with fewer depressive symptoms in patients. The quality of the relationship may moderate the expected associations.

Conclusion: This study will provide important knowledge on couples’ perspectives on breast cancer and the relation to the patient’s psychological adjustment. The results will help health care providers to integrate partners as a resource in rehabilitation and supportive care for patients with breast cancer.

Sexual information and counseling needs among cancer outpatients and their significant others

Speaker:
• Nanna Friðriksdóttir, Landspítali University Hospital, University of Iceland, Iceland
• Pórunn Sævarsdóttir, Landspítali University Hospital, Iceland
• Þórunn Sævarsdóttir, Landspítali University Hospital, Iceland
• Sigríður Gunnarsdóttir, Landspítali University Hospital, Iceland

The effects of cancer and its treatment on sexuality are well described and the need for related information is important to cancer patients. At Landspítali cancer patients are screened for distress and provided with information and multidisciplinary services during chemotherapy/radiation. In January 2011, a two-year project about sexuality and cancer was launched to offer more information on sexuality and the services of a sexuality counselor. In conjunction the degree to which sexual information needs were met and the need for sexuality counseling were assessed.

Purpose: to examine whether outpatients receiving chemotherapy/radiation and their relatives receive too little, adequate or too much information about the effects of treatment on sexuality; satisfaction with resources offered for sexual problems; and the need for specialized sexual counseling.

Method: In January and November 2011, and May 2012, 140, 126 and 162 participants respectively, completed a self-report questionnaire designed for the purpose of this survey.

Results: A total of 363 patients and 65 significant others participated. None received too much information. Over 70% of both groups who considered the issue relevant reported receiving adequate information on the effects on physical appearance and fertility. Too little information on the effects of treatment on sexuality satisfaction with resources offered for sexual problems; and the need for specialized sexual counseling.

Conclusion: Information and counseling about sexual-health issues in the oncology setting is important just as other psychosocial support and should be integrated into daily care.
Parallel Session 4.2: Rehabilitation services and patient needs

Patient needs and quality of life

Key Note Speaker:
- Dorte Gilså Hansen, National Research Center of Cancer Rehabilitation Research, University of Southern Denmark, Denmark

Rehabilitation is a process intended to enable people with disabilities to reach and maintain optimal physical, sensory, intellectual, psychological and social function (WHO). Cancer rehabilitation is a field of growing evidence and concern. Two conceptually different morbidity outcomes unmet needs and health-related quality of life are used 1) to identify cancer patients in need of clinical attention and 2) to evaluate rehabilitation programs. The knowledge on the interrelation of unmet needs and quality of life is, however, scarce. This presentation includes a Danish study investigating the hypothesis, that patient perceived unmet needs of rehabilitation during the cancer trajectory are associated with decreased quality of life.

A randomised controlled trial on improving general practitioners’ services in cancer rehabilitation: Impact on general practitioners’ proactivity and on patients’ participation in rehabilitation activities.

Speaker:
- Stinne Holm Bergholdt, National Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Jens Søndergaard, National Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Pia Veldt Larsen, National Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Carsten Rose, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Stefan Rydén, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Christina Carlsson, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Maria Hellbom, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden

Purpose: A first step to improve patient outcomes during rehabilitation is that patients take part in relevant rehabilitation activities. Few studies have evaluated initiatives targeting implementation of cancer rehabilitation. In this study we aim to test the effects of a complex intervention designed to improve general practitioners’ (GPs) involvement in cancer rehabilitation. Outcomes were patients’ participation in rehabilitation activities and proactive contacts to patients by their GP.

Methods: Cluster randomised controlled trial. All general practices in Denmark were randomised to an intervention group or to a control group. Patients were subsequently allocated to the intervention or the control group (usual procedures) based on randomisation status of their GP. Cancer patients were allocated from all departments treating cancer at Vejle Hospital, and could in principle be residents from all parts of Denmark.

Adult patients treated for incident cancer at Vejle Hospital, Denmark, between 12 May 2008 and 28 February 2009 were assessed for eligibility. A total of 955 mixed-site cancer patients (486 in the intervention- and 469 in the control group) registered with 323 general practices were randomised. The intervention included an interview about rehabilitation with a rehabilitation coordinator at the regional hospital, comprehensive information to the general practitioner about individual needs for rehabilitation and an encouragement to the GP to contact the patient to offer support and guidance on rehabilitation. Questionnaires were administered to patients at 14 months after inclusion evaluating proactive contact to patients by the GP, and patients’ participation in rehabilitation activities.

Results: Patients were on average 63 years at baseline and 72% were female. The most frequent cancer localisations were breast (43%), lung (15%), and malignant melanoma (8%). Analyses are ongoing. Results will be ready for presentation at the symposium.

The Regional Cancer Centre South cancer rehabilitation project. Implementing a workable model for the cancer care process.

Speaker:
- Maria Hellbom, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Marie Ljung, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Christina Carlsson, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Stefan Rydén, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden
- Carsten Rose, Regional Cancer Centre South, Skånes University Hospital, Lund, Sweden

Purpose: The purpose of the Regional Cancer Centre South (RCCS) cancer rehabilitation project is to provide cancer care staff with information and inspiration to continually approach and assess cancer patients’ rehabilitation needs, to expand their knowledge of rehabilitation interventions available, to implement rehabilitation efforts in a structured fashion, and create and support professional networks for referral.

Methods: The project, starting November 1st 2011, primarily targets cancer process leaders and contact nurses in the counties of Kronoberg, Blekinge, Halland and Skåne. RCCS has created an online one-stop-shop with free material, including assessment and planning tools, clinical cancer rehabilitation guidelines, online lectures and links to external cancer rehabilitation resources. Furthermore, information is spread in workshops and meetings for process leaders and contact nurses, who also have access to continuous online support and information from cancer rehabilitation expertise. As part of the project, contact nurses will participate in a university course in cancer rehabilitation.

Results: The project will be evaluated with a questionnaire mailed to all contact nurses involved at project start and one year later.
Meeting cancer patients’ needs of rehabilitation – a patient survey

Speaker:
• Astrid Gisèle Veloso, National Research Center of Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
• Cecille Sperling, Quality & Patient Safety, The Danish Cancer Society, Denmark
• Lise Vistrup Holm, National Research Center for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
• Anne Lehmann Krudsen, Quality & Patient Safety, The Danish Cancer Society, Denmark
• Dorte Gilså Hansen, National Research Center of Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
• Jannette Fink, Department of Oncology, Rigshospitalet, Copenhagen, Denmark

Purpose: Socio-economic status, type of cancer and treatment may influence level on unmet needs of supportive care and rehabilitation. This study aims to analyse the association between patient perceived unmet needs of rehabilitation close to diagnosis and socio-demographic characteristics, cancer type, and treatment.

Methods: Data were primarily obtained from the nationally representative cross-sectional survey “The experiences of cancer patients during diagnosis and treatment, The Danish Cancer Society, 2011”. The questionnaire contained 103 questions targeting cancer patients’ needs – from onset of symptoms until end of treatment. The Danish Patient Register (NPR) was used to identify all Danish residents aged 18+ years with a newly primary diagnosis of cancer diagnosed in the period of May to August 2010. In total 4,346 of 6,720 patients (64.7%) answered the questionnaire sent by mail 3-4 months following date of diagnosis.

The rehabilitation variables were extracted from five questions covering help in relation to: a) communication with a psychologist b) practical help c) counseling related to work life/education d) talking to patients in the same situation, and e) physical rehabilitation. Rehabilitation items, cohabitant status, education, children, treatment and regional place of treatment were self-reported while information on age, gender and cancer diagnoses were obtained from the NPR.

We used logistic regression models.

Results: Unmet need in regard to conversation with a psychologist (56.7%) was reported most frequently, followed by counseling related to work life/education (53.2%), talking to patients in the same situation (52.2%), practical help (42.1%), and physical rehabilitation (23.2%).

Analyses are ongoing and results will be ready for presentation at the symposium.

Conclusion: Unmet needs for rehabilitation close to rehabilitation vary between themes. Furthermore, analysis of unmet needs may add important knowledge to organisers and clinicians in their priority settings for future intervention strategies.

Parallel Session 4.3: Return to work

What make long-term testicular cancer survivors stay at work?

Speaker:
• Alv A. Dahl, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway
• Jan Oldenburg, Department of Oncology, Oslo University Hospital Ullevål, Norway
• Sophie D. Fosså, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway
• Sævar Berg Gudbergsson, Montebello Cancer Center, Norway

Purpose: After treatment men with testicular cancer return to work or education. Several studies have shown that the unemployment rate of testicular cancer survivors (TCSs) is similar to cancer-free controls. In this longitudinal study, we examine the variables significantly associated with staying at approximately 20 years after diagnosis.

Methods: A national Norwegian study (Survey-1) of 1,814 TCSs treated between 1980 and 1994 and alive in 2000, resulted in 1,438 valid questionnaires (79% response rate), with a mean follow up time of 1 1.3 years. Among 1,383 TCSs, aged 23-67 years (mean 44 years), 86% (95%CI 84-88%) held full or part-time work. Survey-2 was done in 2007/8 addressing 1,383 TCSs and among the 999 (72%) responded, 948 were younger than 67 years (general age of retirement). Their mean follow-up time was now 19.6 years since diagnosis. Based on these two measurements this study explored: 1) What proportion of TCSs stays at work at long-term follow-up; and 2) What variables at survey-1 predict staying at work on survey-2?

Results: At Survey-2 84% (95%CI 81-86%) of TCSs were working, which did not differ significantly from Survey-1. Among them 758 (80%) were working at both surveys, while 34 (3%) had started working since Survey-1. The proportion leaving work life was 11%, while 6% did not work at any of the surveys. In bivariate analyses many Survey-1 variables were significantly related to staying at work in Survey-2, however not treatment type. We tested 15 of these variables in a multivariate analysis, and significant associations with staying at work in Survey-2 were found for younger age, being in paired relationship, higher level of
education, better physical quality of life, and better sexual function at Survey-1.

Conclusion: A high proportion of TCSs keep their working capacity for a long time after diagnosis.

Presentation number 4.3.2

Changes in working ability and sports activity related to treatment modalities and long-term symptoms among women treated for breast cancer

Speaker:
• Lise Kronborg, Department of Occupational- and Physiotherapy, Rigshospitalet 8511, Copenhagen University, Denmark
• Rune Gartner, Section for Surgical Pathophysiology, Rigshospitalet 4121, Copenhagen University, Denmark
• Bente S.A. Andersen, Metropolitan University College, Copenhagen, Denmark
• Niels Kroman, Section for Surgery Pathophysiologik, Rigshospitalet 4121, Copenhagen University, Denmark
• Henrik Kehlet, Section for Surgical Pathophysiology, Rigshospitalet 4074, Copenhagen University, Denmark

Purpose: To examine how self-reported changes in working ability or sports activity are associated with treatment-related long-term effects (pain, swelling/heaviness, sensibility disturbance, shoulder/arm morbidity), age and treatment modalities in employed Danish women treated for breast cancer in 2005-2006.

Methods: 2350 employed women treated for breast cancer in 2005-2006 after standard DBCG 2004 treatment protocol were included in a nationwide cross-sectional questionnaire survey based on data from Danish Breast Cancer Cooperative Group, conducted in January to April 2008. Response rate 88% (n=3517). Age 25-69 years, mean 54.3 years, SD 9.1. Observation time was 13-41 months, mean 26 months. Primary outcomes were changes working ability and sports activity within this group related to treatment modalities. Secondary outcomes were prevalence of shoulder/arm impairment, pain, sensory disturbances and heaviness/swelling related to type of surgery and adjuvant treatment among working female breast cancer survivors.

Results: Major effects on change in working ability were axillary dissection (OR=2.08; CI 1.72-2.57, p<0.0001), chemotherapy (OR=1.89; CI 1.58-2.23, p<0.0001) and younger age (OR=1.05 per year; CI 1.04-1.06, p<0.0001). Heaviness (OR=2.35; CI 1.93-2.87, p<0.0001), sensory disturbances (OR=2.15; CI 1.69-2.75, p<0.0001) and pain (OR=2.08; CI 1.70-2.56, p<0.0001). Major effects on reporting change in sports activity were mastectomy (OR=1.30; CI 1.11-1.66, p=0.003) and shoulder/arm impairment. Younger age, axillary dissection, chemotherapy, BCS, heaviness/swelling and sensory disturbances were identified as most frequent factors related to reporting a change in working ability.

Conclusion: These results support the relevance of a targeted effort towards further evidence based research and practice within the physiotherapeutic breast cancer rehabilitation field suggesting special programs aimed at the younger; working population of breast cancer survivors treated with axillary dissection chemotherapy and/or BSC experiencing symptoms of lymphoedema. Further research is needed in the rehabilitation field to explore how well today rehabilitation programs fulfill the needs of rehabilitation regarding working ability in breast cancer survivors.

Presentation number 4.3.3

Work ability patterns after open and robotic-assisted laparoscopic radical prostatectomy among men aged <65 with prostate cancer

Speaker:
• Signun Dahl, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway
• Andreas Steinsvik, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway
• Alv A. Dahl, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway
• Sophie D. Fosså, Department of Oncology, Oslo University Hospital, Radiumhospitalet, Norway

Purpose: Prostate cancer (PCa) is increasingly diagnosed in younger men, who are still active in work life. In Norway approximately 1,000 men <65 years were diagnosed with PCa in 2009. Work ability after radical prostatectomy (RP) has, however, hardly been studied. The purpose of this study is to examine the proportion of PCa patients who have not returned to work 12 months after RP, and factors which influence that outcome.

Methods: This is a prospective follow-up (pre-treatment and 12 months) study of 266 men <65 years (median 60 years, range 44-64) who were active in the workforce at the time of RP, and who at both time points completed a questionnaire covering adverse effects, and aspects of somatic and mental health. Logistic regression models were applied to explore variables associated with work termination at follow-up.

Results: At follow-up 41 (15%, 95%CI 11-20%) of the patients had left their work, while 225 (85%) stayed on. Older age and higher level of neuroticism reported at baseline, were significantly associated with work termination after 1 year. Patients treated with open radical prostatectomy were significantly more likely to stop working compared with those treated with robotic-assisted RP. Co-morbidity, increased fatigue, reduced physical and mental quality of life (QoL) reported at 12 months were significantly associated with work termination in bivariate analyses, while various aspects of urinary and sexual function were not. In multivariate analysis older age and reduced physical QoL were significantly associated with work termination.

Conclusion: Among PCa patients <65 years, 15% had left work 1 year after treatment with RP. Typical adverse effects and co-morbidity were not significantly associated with leaving the work force, while older age and reduced physical QoL showed significant associations. Health personnel caring for these patients should explore physical QoL and eventually investigate possible improvements.
Return to work for survivors from haematological cancer: a register-based cohort study

Purpose: The aims of this study were to determine return to work (RTW) rates after diagnosis in a cohort of Danish survivors from haematological cancer and to explore if socioeconomic, demographic and clinical factors were associated with RTW.

Materials and methods: The study population consisted of all individuals diagnosed with haematological cancer in Denmark between 2000 and 2007, who were aged 19-55 years at time of diagnosis, and who received sickness absence compensation at or after diagnosis (n=1901). Data were obtained from national administrative registers, and all individuals were followed from third week of receiving sickness absence compensation until date of RTW, death or 1 March 2012. Cumulative incidence curves were computed to illustrate the course of RTW according to time to RTW in the univariate analyses, and Cox regression analyses were conducted to compare time to RTW between subgroups in the study population.

Results: The proportion of RTW for survivors was 38% one year after diagnosis, 52% two years after diagnosis, and four years after diagnosis it was 58%.

According to our preliminary univariate analyses, use of antidepressants or anxiolytics after diagnosis was negatively associated with time to RTW (HR, 0.68; 95% CI 0.56-0.82). Some diagnoses were also related to RTW, as patients with acute leukaemia and with myelomatosis had delayed time to RTW compared to patients with Hodgkin lymphoma (HR acute leukaemia, 0.43; 95% CI 0.35-0.53 and HR myelomatosis, 0.35; 595% CI 0.26-0.46).

Female gender, lower education, lower income, being single, having no children and higher age were also negatively associated with RTW, whereas housing tenure and ethnicity were not related to time to RTW in the univariate analyses.

Conclusion: Univariate analyses suggest that most of the factors evaluated were associated with RTW, but multivariate analyses are ongoing and results of these are expected to be ready for presentation at the conference.
The case against screening cancer patients for distress

There is a lack of evidence that implementing routine screening for distress improves cancer patient outcomes or that routine screening can be sustained in clinical settings without a considerable infusion of resources. Proponents of screening make unrealistic claims about the prevalence of psychiatric morbidity among cancer patients, trajectories of distress, the performance of screening instruments, and patient interest in services. The depression literature suggests substantial enhanced resources are needed for screening for distress to be effective, but that screening may add no benefits over patients and clinicians simply having access to such enhanced resources. Evidence that psychosocial interventions reduces distress among screened patients is quite limited in quality and quantity, precluding evaluation of whether such interventions warrant widespread dissemination and implementation. Depending on the context, mandated screening for distress may increase inappropriate prescription of psychotropic medication in the absence of adequate diagnosis and follow up. It may also disrupt patients readily accessing services on their own by consuming scarce resources and requiring patient psychiatric evaluation for patients who screen positive. Alternatives to screening include enhanced support, access to services, and follow up for patients already known to be distressed or socially disadvantaged, as well as providing ready opportunities for patients to discuss unmet needs with professional and peer counselors regardless of level of distress. There needs to be clearer demonstration that mandating screening represents truly patient-oriented care benefiting patient outcomes, rather than just serving professional self-interests.

Results: 7 of 14 of the screening RCTs reported benefits on patient wellbeing, 2 of 10 non-randomized sequential cohort screening studies reported benefits on patient wellbeing. Nine implementation studies measured receipt of psychosocial referral. The chances of receiving a psychosocial referral increased by 3x in cancer patients who were screened vs not screened, an increase of 12% over usual care ($p = 0.03$). Six QoL implementation studies found that screening significantly increased clinician-patient communication of emotional issues after exclusion of studies which omitted feedback of results to clinicians. Barriers to screening were significant. The proportion of cancer patients who received psychosocial care after a positive distress screen was only 31.3% but this was 20% greater than those given resources after a negative screen. Screening was more effective when screening was linked with mandatory intervention or referral.

Conclusions: Screening for distress potentially has added value but at a cost of clinician time. Barriers to screening must be addressed for screening to be fully effective.

Screening Cancer Patients for Distress: What Does the Evidence from 31 Studies Actually Show?

Key Note Speaker:

• Alex Mitchell, Leicestershire Partnership Trust, and University of Leicester, United Kingdom

Objectives: There is still considerable uncertainty about the merits of screening for distress in cancer settings. Screening is not widely implemented nationally but this is only problematic if screening actually has benefits and few harms. Several narrative reviews have addressed this area but none to date have been able to quantitative summarize what screening can and cannot achieve.

Method: A systematic search and meta-analysis of the latest data was conducted. 17 observational screening studies were identified that revealed how many patients received psychosocial care or referral following screening. 19 implementation studies were identified that clarified how many patients benefited from distress screening (or feedback of screening results). An additional 5 implementation studies examined quality of life, making a total of 31 distress/QoL studies. Outcomes were effects on patient wellbeing, quality of care and communication.

Rehabilitation of older cancer patients

Key Note Speaker:

• Lodovico Balducci, H. Lee Moffitte Cancer Center & Research Institute, and University of South Florida College of Medicine, USA

As the population ages the rehabilitation needs of older cancer patients are becoming a common problem. Cancer is a disease of age, and more and more elderly nowadays survive their cancer. In addition to survival and symptom palliation the main goal of cancer treatment in the older person is prolongation of active life expectancy. The presentation will include three parts: definition of age, effects of antineoplastic treatment on the aged, and main rehabilitation issues. The physiologic age of a person reflects both mortality risk and functional reserve (that is stress coping ability). Determination of physiologic age is key to establish whether the patient may benefit from treatment. Nowadays a comprehensive geriatric assessment (CGA) is the only validated instrument to assess a person’s physiologic age. In addition a CGA is predictive of the complications of surgery and cytotoxic chemotherapy, and is the most reliable instrument to detect long term effects of cancer and its treatment. Age is a risk factors for short term myelotoxicity and neuropathy from cancer chemotherapy and long term cardiac insufficiency and myelodysplasia/acute leukemia. The main rehabilitation needs of older individuals...
include management of fatigue, peripheral neuropathy, chronic cardiac insufficiency, osteopenia, and cognitive decline.

Cancer and ageing

Key Note Speaker:
- Sophie Fosså, Oslo University Hospital, The Norwegian Radium Hospital
- Division of Surgery and Cancer Medicine, Norway

Cancer is a typical disease of the elderly population (>60 years old). Compared to younger individuals the incidence and mortality in elderly persons are increased by factors of 10 and 16, respectively. In the elderly patients the course of the disease may differ from that expected in younger patients, with for example, a more indolent course of breast cancer and a more aggressive course of ovarian cancer. Due to age-related physiologically reduced organ reduction and co-morbidity treatment of the elderly cancer patient is particularly challenging, not at least due to the limited experience from trials which address these cancer patients’ therapy. Under-treatment is the main problem leading to non-justifiable morbidity and pre-mature death. The chronological age alone should not cause treatment modifications. Co-morbidity and results of Comprehensive geriatric Assessment (CGA) have to be considered prior to treatment decisions.

Parallel Session 9.1: Late effects

Chemo brain

Key Note Speaker:
- Sanne Schagen, Division of Psychosocial Research and Epidemiology, The Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital, The Netherlands

NO ABSTRACT

Fertility-related distress and health-related quality of life among female and male cancer survivors

Speaker:
- Gabriela Armuand, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden
- Lena Wettergren, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden
- Kenny A. Rodriguez-Wallberg, Department of Clinical Science, Intervention and Technology (CLINTEC), Karolinska Institutet, Stockholm, Sweden
- Claudia Lampic, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden

Purpose: The main aim was to investigate fertility-related distress and the relationship between fertility-related distress and Health Related Quality of Life (HRQoL) among cancer survivors 3-7 years post-diagnosis. Another aim was to determine whether having received fertility-related treatment information and/or having used fertility preservation was associated with fertility-related distress.

Methods: Participants were cancer survivors diagnosed between 2003 and 2007 identified in population-based cancer registers in Sweden. Inclusion criteria: age 18-45 at diagnosis; diagnosed...
with lymphoma, acute leukemia, testicular cancer, ovarian cancer, or female breast cancer treated with chemotherapy. A total of 328 women and 156 men (60% response) completed a postal questionnaire including the SF-36, the Fertility Problem Inventory (FPI) and study-specific questions on fertility-related treatment information, use of fertility preservation, reproductive desire, experiences of fertility problems and fertility-related distress (VAS).

Results: Of the 484 survivors, 94 (19%) had a current desire to have children and, of these, 33 reported having experienced post-treatment fertility problems. Preliminary multiple linear regression analyses indicate that the main determinants for high levels of fertility-related distress were a desire to have children and post-treatment fertility problems. Other significant factors were young age, living alone and high importance placed on parenthood. Having children had no protective influence on fertility-related distress. High levels of fertility-related distress were associated with low levels of HRQoL among survivors with a desire to have children ($r=-0.349$, $p<0.001$). Having received fertility-related treatment information and having used fertility preservation was not associated with levels of fertility-related distress.

Conclusion: The present results indicate that fertility-related distress is associated with low levels of HRQoL among survivors with a desire to have children (r=-0.349, p<0.001). Having received fertility-related treatment information and having used fertility preservation was not associated with levels of fertility-related distress.

Parallel Session 9.2: Cancer in child- and young adulthood

Presentation number 9.2.1

Psychological consequences of childhood cancer for the children and the parents

Key Note Speaker: Louise von Essen, Department of Public Health and Caring Sciences, Sweden

Fear of death, uncertainty related to the course of treatment, and restructuring of roles and responsibilities may take a severe toll for children struck by cancer and their parents. At issue for the health care sector is how to provide clinically effective and cost-effective care and psychological treatment to those childhood cancer patients and their parents who need it to prevent long-term distress which is a problem in itself with a potential impact on e.g. employment, financial issues, and survivors’ ability to live independently.

A research program, Uppsala University Psychosocial Care Programme (U-CARE), within the pediatric oncology context will be presented. The program includes observational studies on short- and long-term psychological consequences of cancer for those struck by cancer during adolescence and parents of children with cancer; long-term economic consequences of childhood cancer for survivors and their parents, and posttraumatic growth among childhood cancer survivors. The program also includes clinical trials investigating the clinical efficacy and cost-effectiveness of internet based self-help-programmes of interactive support and cognitive behavioural therapy for adolescents recently diagnosed with cancer and parents of children with cancer.
Reproductive Consequences of Cancer Treatment in Childhood

Key Note Speaker:
- Jeanette Falck Winther, Childhood Cancer Survivorship Group, Danish Cancer Society Research Center, Denmark

Modern treatments for childhood cancer include high doses of ionizing radiation and combinations of high-dose systemic chemotherapy. Although these curative therapies have the potential to induce germ-cell mutations that lead to genetic disease in the next generation, there is still little understanding of the genetic consequences of such treatments. The continuing rise in survival rates after childhood cancer, now about 80%, and the fact that survivors can have children of their own have highlighted the importance of evaluating the effects of cancer therapy on fertility, pregnancy, and the health of the growing number of children of cancer survivors. In genetic counseling, in the area of mutagenicity of the human gonad, the ultimate concern is hereditary disease. Does cancer treatment induce damage of human germ cells? Does it cause actual disease in the offspring, or mutational events of no clinical significance? These concerns are voiced not only by geneticists and pediatric oncologists but also by the former patients themselves. Childhood cancer survivors worry about whether their children will be healthy or whether they might pass on a genetic risk or predisposition for cancer. The talk will give an overview of the results of the first population-based studies within this field, which evaluate whether preconception treatment for cancer in childhood causes trans-generational germ-cell mutations. If so, whether these mutations lead to adverse pregnancy outcomes or clinically recognizable disease in the offspring including spontaneous and induced abortions, stillbirths, neonatal deaths, cancer, chromosomal abnormalities and congenital malformations.

A controlled study of attachment patterns in survivors of childhood lymphomas

Speaker:
- Ellen Karine Grov, Buskerud University College, Norway
- Hanne Mari Hamre, Department of Oncology, Oslo University Hospital, Radomshospitalet, Norway
- Ingrid Olssøn, Department of Psychiatry, Innlandet Hospital Trust, Norway
- Alv A. Dahl, Department of Oncology, Oslo University Hospital, Radomshospitalet, Norway

Purpose: Patients with childhood lymphomas and their parents are exposed to considerable stress caused by the disease, its treatment and late effects. These stressors may disturb the children’s optimal development of attachment pattern, which represents working models for their later intimate relationships. This study has two aims: 1) To compare the attachment patterns of childhood lymphoma survivors (CLSs) with those of a non-mature sample of young adults (NORMs); 2) To identify factors significantly associated with insecure attachment in CLSs considering eventual opportunities of intervention.

Methods: In 2007 all adult survivors who were diagnosed with Hodgkin lymphoma or Non-Hodgkin lymphoma before 18 years between 1970 and 2000 at university clinics in Norway, were identified. These 220 CLSs were invited to participate in a follow-up study comprising a questionnaire and a clinical examination. Among 140 CLSs completing the questionnaire, 129 also completed the Experiences in Close Relationship (ECR) instrument. ECR was also completed by 437 young adults among 1,500 invited from the population.

Results: The median age for CLSs at survey was 31.3 years (range 19-55) and median follow-up time was 20.5 years (range 7-37). The mean level of ECR-anxiety and ECR-avoidance in CLSs showed no significant differences from NORMs. Based on ECR-categories 59% of CLSs showed secure attachment and 41% the three types of insecure attachment (fearful, pre-occupied, or dismissing), while the corresponding proportions in NORMs were 60% and 40% (adjusted p=0.50). Age at diagnosis, treatment types including bone-marrow transplantation, and recurrence showed no significant associations with the insecure versus secure attachment patterns.

Conclusion: This follow-up study of adult CLSs showed similar attachment patterns as NORMs, and treatment-related variables did not show any significant associations with the secure/insecure attachment dichotomy. On group level CLSs have the same probability for secure adult intimate relationships as NORMs.

“Meeting reality” – Young cancer survivors experiences with re-entering everyday life after cancer treatment

Speaker:
- May Aebea Hauken, University of Bergen, Norway
- Toril B. Larsen, University of Bergen, Norway
- Ingrid Holsen, University of Bergen, Norway
- Eirik Fismen, Red Cross Haugland Rehabilitation Centre, Norway

Purpose: Cancer in young adulthood (YA) is rare. Due to cancer treatment intensity, the vulnerability of YA life phase and length of time being a survivor; cancer in this age may have a great impact of the entire life. YA survivors are underrepresented in research and knowledge of cancer in this age is scarce. The aim of this study was an exploratory, qualitative investigation of how young cancer survivors experienced re-entering everyday life after cancer treatment.

Methods: 20 YA survivors (22 – 35 years), with different cancer diagnoses allocated to a rehabilitation program, were included. Semi-structured interviews lasting 45 – 75 minutes were conducted. The interviews were transcribed and data analysed using Systematic Text Condensation to identify themes.
Results: Five main themes emerged: 1) “Lack of preparing”, 2) “Mismatch between expectations and reality”, 3) “Late effects” and 4) “Lack of understanding” and 5) “Neither sick nor healthy”.

Conclusions: The results indicate that these YA cancer survivors neither were adequately prepared for the post treatment period, nor had enough support and follow up during their post treatment period. Young adult cancer survivors need to be prepared for post treatment period and have a close follow up focusing on rehabilitation and health assets.

Parallel Session 9.3: Physical activity I

Exercise-Oncology Research: Current Status and Future Directions

Key Note Speaker:
• Lee Jones, Department of Radiation Oncology, and Cancer Survivorship, Duke Cancer Institute, USA

The presentation will overview the current extant literature base together with ongoing / planned studies examining the role of exercise therapy following a cancer diagnosis with a view towards identifying major gaps in the knowledge.

Level of physical, leisure, and daily living activities in cancer patients undergoing radiotherapy: which patients will need additional support?

Speaker:
• Anna Enblom, Karolinska Institute, Sweden
• Kristin Campbell, University of British Columbia, Canada
• Susanne Börjeson, Linköping University, Sweden

The aim was to describe the level of physical, leisure and daily activities during and after radiotherapy, and to identify characteristics associated with a lack of restored activity level post-radiotherapy. Patients (n=196) undergoing abdominal/pelvic radiotherapy reported activity level prior to treatment (baseline), weekly during radiotherapy (median 5 weeks) and 4-weeks post-treatment (follow-up). The proportions of patients who increased activity level versus at baseline, 47% had a lack of restored activity level compared to at baseline, 47% had a lack of restored activity level at follow-up compared to baseline.

Conclusions: The results indicate that these YA cancer survivors neither were adequately prepared for the post treatment period, nor had enough support and follow up during their post treatment period. Young adult cancer survivors need to be prepared for post treatment period and have a close follow up focusing on rehabilitation and health assets.

A modified exercise protocol may promote continuation of exercise after intervention in lung cancer patients.

Speaker:
• Andreas Holst Andersen, Herlev University Hospital, Denmark
• Anders Vinther, Herlev University Hospital, Denmark
• Lise-Lotte Poulsen, Herlev University Hospital, Denmark
• Anders Mellemgaard, Herlev University Hospital, Denmark

Background: A previous study investigated the effects of a well-documented COPD exercise protocol in lung cancer patients. The study showed significant improvements in physical fitness, but also a relatively poor adherence to continued exercise after the intervention.

The aim of the present study was to investigate the impact of a modified exercise intervention on post-intervention adherence to exercise as well as physical fitness in a broad group of lung cancer patients.

Material and methods: Fifty-nine lung cancer patients were enrolled in a 9-week exercise program. Only eligibility criteria were motivation and absence of co-morbidities that could jeopardize safety. The intervention included 3 x 3 weeks of exercise (3 weeks supervised, 3 weeks home-based and 3 weeks of supervised). The supervised exercise sessions consisted of a warm-up, and an estimated VO2 max test (Incremental Shuttle Walk Test – ISWT or Yo-yo endurance (continuous) test depending on ability). Furthermore, the participants underwent a variety of activities intending to improve endurance and to motivate to continued exercise after the intervention. During the unsupervised period, the participants followed an exercise logbook. VO2 max was estimated at baseline and post-intervention and post-intervention exercise habits were assessed by a telephone interview 1 month later.

Results: Fifty-one patients initiated the exercise intervention. Twenty-two dropped out. Of the remaining 29 patients, full data was available for 25 patients (estimated VO2-max). Twenty-six of the 29 were available for the telephone interview. Among the 26 with adequate compliance, 18 (69%) continued to be physically active. No changes in estimated VO2-max (Pre-test: 14 ± 3 ml O2/kg/min. and post-test: 14 ± 3 ml O2/kg/min. were observed).
Abstracts

Conclusion: The present study showed an increased level of continuance of physical activity compared to the previous study. The present study could not repeat the significant improvements in estimated VO2-max from the previous study.

Fatigue after breast cancer may be related to conditions other than the cancer. The impact of comorbidity is essential.

Speaker:
- Randi Reidunsdatter, Department of Radiography, Faculty of Technology, HST, Trondheim / Research Centre for Health Promotion and Resources HST/NTNU, Norway
- Marianne Hjermstad, European Palliative Care Research Centre, Faculty of Medicine, NTNU, Regional Centre for Excellence in Palliative Care, Dept of Oncology, Oslo University Hospital, Norway
- Line Oldervoll, LHL Health, Røros Rehabilitation, Norway
- Steinar Lundgren, Department of Oncology, St.Olavs University Hospital / Department of Cancer Research and Molecular Medicin, Faculty of Medicin, NTNU, Trondheim, Norway

Purpose: Fatigue after treatment for breast cancer is common, but is also prevalent in people with chronic diseases such as heart failure, diabetes, and depression etc. The primary objective was to compare the level of fatigue between BC patients one year after end of treatment with data from a representative survey of the Norwegian population (GenPop). Secondary aim was to explore the association between chronic conditions and fatigue and in both samples.

Design and Method: 245 patients treated with chemo—and/or radiotherapy after surgery, were assessed one year after treatment. Comorbidity was recorded by clinical examinations in patients and by self-report in the GenPop (N=652). Fatigue was measured by the 3-item subscale of the EORTC QLQ-C30, with higher scores on the 0-100 scale implying more fatigue. Analysis of covariance was applied to compare age-adjusted mean scores between groups.

Results: Mean age was 58 (9) years in patients and 52 (14) years in GenPop. 23% of patients and 32% of GenPop had one or more of the following conditions; cardiovascular- or pulmonary disease, diabetes or depression. No significant differences were found in fatigue between BC patients and GenPop (mean score 26.7 vs. 29.7). Comorbidity was the greatest determinant of increased fatigue, regardless of BC treatment. Patients with comorbidity were significantly more fatigued than those without comorbidity (mean difference 10.4), as found in the GenPop (mean difference 13.3).

Conclusion: Similar fatigue levels in BC patients and GenPop one year after treatment are promising, but longer follow-up is needed. Comorbidity conditions should always be assessed when evaluating fatigue and other patient related outcomes. Prevention or treatment of common chronic conditions might be considered in rehabilitation programs to reduce fatigue in cancer survivors.

Keywords: Fatigue, breast cancer, general population, comorbidity
Comprehensive Rehabilitation in Cancer Patients – From Diagnosis, along the Cancer Treatment Trajectory and into Society.

A Copenhagen Research Programme

Key Note Speaker:
• Lis Adamsen, Department of Public Health, Copenhagen University, and University Hospital Centre for Nursing and Care Research, Denmark

Combating cancer is an immense challenge that has placed a substantial burden on modern society. With the steadily increasing number of cancer survivors, our health care system needs evidence-based interventions to help patients get back on track. Rehabilitation efforts within cancer fall short of living up to their potential which is illustrated by the disruption of the physical, emotional and social identity that cancer patients currently face. During the last decade, there has been a significantly increased interest in the role of exercise therapy following a cancer diagnosis. Therefore, in 2011, five collaborative institutions with 28 researchers formed the ‘Centre of Integrated Rehabilitation of Cancer Patients’ (CIRE) and initiated six Ph.D. and six post doc positions. The research group constitutes a cross-scientific, cross-sectoral and multidisciplinary platform conducting exercise-based trials combining quantitative and qualitative research methods. Emphasis is placed on the consequences of cancer and its treatment in order to overcome obstacles within the health care system and in the society. The objective is to test and optimize the general efficacy of early initiated exercise interventions following a cancer diagnosis as a preventive and adjunct strategy on physical, emotional, social, and societal outcomes in patients with different diagnoses, prognoses, age and gender. In addition to the CIRE program, the present project will conduct metaanalyses and metasyntheses across CIRE’s nine clinical controlled trials and three theoretical projects on common effect outcomes and linked to Danish clinical and social databases. We will combine multiple health, social and societal outcomes to understand the complex mechanisms involved in cancer survivorship, identify risk groups and initiate targeted interventions. We expect that the project will contribute to new theoretical, clinical and organizational strategies in the development of rehabilitation programs along the cancer continuum.

Presentation number 10.1.2

Efficacy of a Pragmatic 12-month Exercise Rehabilitation Program in Post Therapy Cancer Survivors: A Randomized Controlled Trial

Speaker:
• Julie Midtgaard, University Hospital Centre for Nursing and Care Research, Denmark
• Jesper Frank Christensen, UCSF, Rigshospital, Denmark

Purpose: To determine the efficacy a 12-month pragmatic exercise rehabilitation program on exercise capacity, self-reported physical activity, and patient-reported outcomes in cancer survivors after the completion of primary therapy.

Methods: Using a two-arm randomized controlled design, patients with solid or hematological malignancies (n=214), after the completion of primary therapy, were randomly assigned to: (1) a 12-month rehabilitation program consisting of 3 individual and 6 group-based face-to-face exercise counselling sessions in combination with once weekly fixed supervised group-based, high-intensity exercise training (PACT; n=108) or (2) usual care (UC, n=106). The primary endpoints were self-reported level of leisure-time physical activity (PA) and exercise capacity (VO2peak, mL.kg.-1.min-1). Secondary endpoints were muscle strength, anxiety and depression, health-related quality of life (HRQOL), and general well-being. Assessments were conducted at baseline, 6 months and 12 months.

Results: At 12 months, 153 of participants (71.5%) completed the exercise capacity assessment and 68.7% completed the self-reported PA level measure. Adherence to the supervised, group-based exercise training sessions was 66.6%. The percentage of patients reporting meeting PA goal behavior (>3×week) was significantly increased in the PACT group versus the UC group (70.4% in PACT vs. 43.4% in UC, p=0.001). Repeated measures analyses indicated that VO2peak increased 5.09 mL.kg.-1.min-1 in the PACT group and increased 4.17 mL.kg.-1.min-1 in the UC group (mean difference, 0.91 mL.kg.-1.min-1; 95% confidence interval [CI], -0.19 to 2.02; p=0.11). Significant between group differences were also observed at 12 months for upper and lower body strength (p<0.001), depression (p=0.02), and the mental health (p=0.041) subscale of HRQOL.

Conclusion: A pragmatic exercise rehabilitation program is an effective strategy in promoting PA behavior long-term with concomitant changes in cardiorespiratory fitness in post-treatment cancer survivors.

Presentation number 10.1.3

The impact physical activity on association between changes in body build and quality of life in breast cancer women undergoing endocrine therapy.

Speaker:
• Katarzyna Hojan, Department of Rehabilitation in the Greater Poland Cancer Centre, Poland
• Marta Molinska-Glura, Chair and Department of Computer Science and Statistics, Poznan University of Medical Sciences, Poland
• Piotr Milecki, Department of Electroradiology, Poznan University of Medical Sciences, Poland, Department of Radiotherapy, Greater Poland Cancer Centre, Poznan, Poland
Purpose: Endocrine therapy (ET) is a basic method of treatment in breast cancer (BC). However, its impact on body composition and quality of life (QoL) remains controversial. We sought to assess the impact of physical activity (PA) during ET on body build changes and QoL in women with BC.

Methods: The study was conducted in 53 breast cancer women before and after 6, 12, 18 months of ET. Between 6th-12th month aerobic training (AT) was performed and after 12 months additional weight training (WT) was included. Outcome measures were body composition (DXA) and QoL using EORTC questionnaires.

Results: A six-month period of ET without PA resulted in reduction (p<0.05) in free fat body mass (FFBM) and lean (LBM) as well as an increase in fat (FBM). We observed a decline in QoL scale, including physical functioning (PF), and an increase in side effects of the therapy. AT resulted in reducing FBM (% android fat) and had a significant impact on the improvement of QoL especially in the areas regarding PF and on experiencing less intensive adverse effects of the therapy. The introduction of WT for the next 6 months led to further reduction in %android and % gynoid fat. The increase in FFBM including muscles was also observed and so was an increase in the positive assessment of QoL during ET.

Conclusion: ET impacts the deterioration of body build and QoL of patients with BC. PA affects their QoL improvement and reduces adverse effects of this form of cancer therapy.

A systematic review of web-based interventions for patient empowerment and physical activity in chronic diseases: Relevance for cancer survivors

Speaker:
• Wilma Kuipers, Netherlands Cancer Institute - Antoni van Leeuwenhoek hospital (NKI-AVL), The Netherlands
• Wim Groen, NKI-AVL, The Netherlands
• Neil Aaronson, NKI-AVL, The Netherlands
• Wilma Kuijpers, Netherlands Cancer Institute - Antoni van Leeuwenhoek hospital (NKI-AVL), The Netherlands

Purpose: The number of cancer survivors is growing. To improve their health status, it seems useful to stimulate patient empowerment and physical activity. While for this purpose interactive, web-based interventions are increasingly used in chronic disease settings, few initiatives are taken for cancer survivors. In our institute (NKI-AVL) we are currently developing such an intervention. As part of the developmental process, we conducted a systematic review of the literature on interactive, web-based interventions for various chronic diseases, and evaluated their potential relevance for cancer survivors.

Methods: Searches were performed in Pubmed, Embase and Scopus to identify eligible articles. Intervention characteristics, effects on patient empowerment and physical activity, information on barriers and facilitators of intervention use, users’ experiences and methodological quality were assessed. We used the recommendations of the Institute of Medicine (IOM) regarding cancer survivorship care to assess the relevance of these interventions for cancer survivors.

Results: Seventeen interventions were included. Although the content, duration and frequency of these interventions varied considerably, elements commonly used included education, self-monitoring, feedback, self-management training, individualized exercise, and communication with either health care providers or patients. These elements could be mapped onto the IOM recommendations for survivorship care. Four studies reported significant, positive effects on patient empowerment and two studies reported positive effects on physical activity. The remaining studies yielded mixed results or no significant group differences in these outcomes. Only limited information on barriers, facilitators and users’ experiences was found. Thirteen studies were of moderate methodological quality.

Conclusion: We identified seven elements used in many interactive, web-based interventions in chronic disease settings that appear to be relevant for cancer survivors as well. While further work is needed to identify optimal combinations of intervention elements, the work performed in other chronic disease settings provides a basis for designing an interactive website for cancer survivors.

Healing Environments in Cancer Survivorship

Key Note Speaker:
• Mette Terp Høybye, University of Copenhagen, Denmark

Purpose: The experience of survivorship, namely the experience of surviving a cancer diagnosis, treatment, and some time after completion of treatment, will necessitate, for some cancer patients, an admission to the Intensive Therapy Unit (ITU), sometimes quite prolonged. This presentation looks at one specific aspect of cancer patients’ experience of survivorship, namely the experience of surviving a stay in Intensive Care (ITU). It focuses on the ITU vivid dreams and hallucinations, that have been linked by research to high levels of PTSD (post-traumatic stress disorder), which can persist over time, and hence impact adversely on the wellbeing of cancer survivors. With the help of concrete examples, this presentation seeks to demonstrate the flight/fight response to trauma typically contained within these vivid dreams and hallucinations, and how working with these can help post-ITU cancer patients make sense of the whole ITU event, and potentially empower them in survivorship.
Arriving at a hospital, entering a lobby and encountering a space that welcomes and reassures or intimidates and confuses is an example of the deep interrelation of people and environment, by which the experience of becoming a patient is formed. Navigating life with a serious illness is deeply affected by the environment where illness is lived and treated, with a profound influence on the patient’s sense of self. This talk looks at how cancer patients resonate and embody the hospital environment as part of the experience of survivorship.

Engaging concrete examples from ethnographic work in a hematological cancer department the talk examines the intersection of private and public spaces in the hospital as dynamic, showing how the environment cannot be separated from its practice. Illustrations of how the hospital environment may obstruct or encourage physical activity and how notions of self and home are negotiated in the hospital bedroom, elucidates a dynamic relation between patients, their sense of well-being and the hospital environment. This will seek to bring us further to an integrative understanding of healing environments, not exclusively measured as a relation between exposure and effect, but as a deep interrelation of patients and the hospital environment.

**Rehabilitation of endometrial and cervical cancer patients: A study of needs and priorities**

**Speaker:**
- Lise Hounsgaard, University of Southern Denmark, Denmark
- Jan Blaakær, Aarhus University Hospital, Denmark
- Lone K. Petersen, Aarhus University Hospital, Denmark
- Lene Seibaek, Aarhus University Hospital, Denmark
- Ole Mogensen, Department of Gynaecology and obstetrics, Odense University Hospital, Denmark
- Mette Moustgaard Mathiesen, Department of Gynaecology and obstetrics, Odense University Hospital, Denmark
- Pernille Tine Jensen, Department of Gynaecology and obstetrics, Odense University Hospital, Denmark
- Mette Moustgaard Mathiesen, Department of Gynaecology and obstetrics, Odense University Hospital, Denmark
- Ole Mogensen, Department of Gynaecology and obstetrics, Odense University Hospital, Denmark

**Purpose:** To identify the short-term rehabilitation needs of women newly diagnosed with cervical or endometrial cancer. Further to identify patient, disease and treatment characteristics associated with increased need of rehabilitation.

**Methods:** Design: a prospective, observational questionnaire study. Sample: Women diagnosed with cervical or endometrial cancer at Odense University Hospital were recruited consecutively in a six month period starting in September 2011. Exclusion happened if they were: insufficiently literate in Danish, mentally impaired, diagnosed with recurrent gynaecologic cancer or missing a confirmed cancer diagnosis before start of treatment. Questionnaire: The questionnaire consisted of the following instruments: the European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire (EORTC QLQ-C30), either the Cervix Cancer (QLQ-CX24) or the Endometrial Cancer module (QLQ-EN24) and the Three-Levels-of-Needs Questionnaire (3LNQ). These were completed twice; pre-treatment and again three months later. The combination of instruments assessed the women’s needs of rehabilitation by covering components essential to the women’s quality of life from three perspectives: problem intensity, problem burden and felt need. Baseline characteristics were collected from either the Danish Gynecologic Cancer Database or the women’s hospital charts. Statistics: Changes in questionnaire scores were evaluated using the Wilcoxon signed rank test. Characteristics associated with increased need of rehabilitation were identified using logistic regression analysis.

**Results:** A total of 98 women were included in the study.44 with cervical cancer and 54 with endometrial cancer. Gathering of follow-up data continues until June 2012, and results are therefore not yet available, but will be ready for presentation at the symposium.
Conclusion: The results are expected to elucidate areas of importance when consulting women with gynaecologic cancer before and after treatment to ensure the best possible coping with disease and transition to everyday life.

Parallel Session 10.3: Social inequality

Presentation number 10.3.1

Cancer and health, disease, work capacity, and sickness absence – does this vary with social status?

Key Note Speaker:
- Kristina Alexanderson, Division of Insurance Medicine, Department of Clinical Neuroscience, Karolinska Institute, Sweden

Both morbidity and mortality are related to social status in different ways. In as much as morbidity varies much with social status, the social consequences of disease, in terms of sickness absence and disability pension varies even more with social status. In health care it is a common to sickness certify patents with cancer diagnoses. Nevertheless, the consequences of being sickness absence for full or part time or with different durations are virtually unknown. Do such consequences – for example, for health, disease, premature death, social isolation, self esteem, career, economy, family situation, et cetera – differ with social strata? Can negative such consequences be prevented? What study designs and data do we need to gain knowledge about such matters?

Presentation number 10.3.2

Social inequality in cancer rehabilitation: a population-based cohort study

Speaker:
- Lise Vilstrup Holm, Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Dorte Gilså Hansen, Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Pia Veldt Larsen, Research Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Christoffer Johansen, Danish Cancer Society Research Center, Denmark
- Jens Søndergaard, Centre for Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark

Objectives: Denmark has a health care system with equal access to care irrespective of socioeconomic status (SES) and employment. The objective of this study was to investigate possible associations between cancer survivors’ socioeconomic status and their 1) need for rehabilitation, 2) participation in rehabilitation activities, and 3) unmet needs for rehabilitation in a 14-month period following date of diagnosis.

Methods: A population-based cohort study was performed including incident cancer patients diagnosed from 1 October 2007 to 30 September 2008. Fourteen months after diagnosis participants completed a mailed out questionnaire developed to measure different aspects and dimensions of rehabilitation. Individual information on cohabitation status, education, income and labour market status was retrieved from national registers. Logistic regression analyses were used to explore associations between socioeconomic status and rehabilitation outcomes.

Results: A total of 3,439 patients responded (70%). Patients living alone more often expressed a rehabilitation need in the emotional area and had to a higher extent unmet needs in a number of areas. In general, patients with short education and low income were less likely to participate in rehabilitation activities and had to a higher extent unmet needs. Being a pensioner or otherwise outside the workforce increased the odds of having unmet needs in several areas.

Conclusions: Despite equal access to care SES had significant impact on cancer survivors’ rehabilitation. We suggest that special attention should be paid to socio-economically disadvantaged groups by taking into account differences in SES when developing targeted rehabilitation programmes.

Presentation number 10.3.3

Patterns of employment, sick-leave, disability pension and income after colorectal cancer – a controlled cohort study on work ability

Speaker:
- Beate Hauagren, Oslo University Hospital, National Resource Center for Late Effects, Department of Oncology, Norway
- Jurate Saltyte Benth, University of Oslo, Institute of Clinical Medicine, Campus Ahus, Norway
- Sophie D Fosså, Oslo University Hospital, National Resource Center for Late Effects, Department of Oncology, Norway
- Alv A Dahl, Oslo University Hospital, National Resource Center for Late Effects, Department of Oncology, Norway

Purpose: Studies on work ability after colorectal cancer (CRC) are few. The purpose of this study was to explore longitudinal patterns of employment, sick-leave, disability pension (DP) and income among patients with CRC.

Methods: Based on data from the Cancer Registry of Norway and longitudinal data from other national registries, 740 patients with CRC (all stages) diagnosed 1992-1996 at the age 45-54 years and 740 matched controls were observed from diagnosis and up to nine years post-diagnosis. None had received DP at time of inclusion.

Results: At 108 months follow-up, 362 patients (49%) were alive. Among them, 32% had received DP due to permanently reduced work ability, 6% were on sick-leave and 12% were not employed. Half of the survivors were employed and received no sickness benefit or DP nine years after diagnosis, compared to 57% of the controls (OR 0.71; 95% CI 0.54-0.92). After adjustment for education and employment at inclusion, hazard ratio for receiving DP was 2.9 (95% CI 2.2-3.8) for the total patient sample, and 1.5 (95% CI 1.1-2.1) for the cancer survivors compared to controls.

At three and nine months post-diagnosis, 80% and 70% of the patients with distant metastasis were on sick-leave, compared
to 81% and 39% of the patients with regional cancer; 70% and 21% of the patients with localized cancer; and 6% and 5% of the controls. Whereas no sex differences were observed concerning sick-leave or DP, only employed female patients experienced a period (3 years) of reduced income compared to employed female controls. No differences in income between employed male patients and controls were observed.

Conclusion: A considerable proportion of CRC patients will for years after diagnosis experience reduced work ability compared to controls. Rehabilitation and workplace adjustment to reduce sickness absence and improve work ability should be a long-term concern.

GHQ scores predict uniquely subsequent survival in successfully treated head and neck cancer patients: a prospective cohort study

Speaker:
• Anne Kari Hersvik Aarstad, Department of ORL H&N Surgery, Haukeland University Hospital, Norway
• Arild Andre Østhus, Department of Surgical Sciences, University of Bergen, Norway
• Jan Olofsson, Haukeland University Hospital, Norway
• Hans Jørgen Aarstad, Dept. of Surgical Sciences, Univ. of Bergen, Norway

Introduction: Health-related QoL (HRQoL) scores predict survival in successfully treated head and neck squamous cell carcinoma (HNSCC) patients. This raises the possibility that distress levels may do the same. Present co-morbidity is both related to HRQoL scores and predict survival. To what extent any distress survival prediction is secondary to HRQoL and co-morbidity scores remains not determined.

Purpose: To examine the survival prediction of distress by general health questionnaire (GHQ) scores, HRQoL by the EORTC Quality of Life questionnaire (QLQ) H&N35 and present co-morbidities among successfully treated and cognitive functioning HNSCC patients.

Material and methods: Through structured interviews, self-reported questionnaires were given to 139 successfully treated HNSCC patients, 67±32 months following diagnosis. GHQ-scores, self-reported levels of neuroticism, avoidance focused coping, coping by suppression of competing activity, alcohol consumption, smoking status, and co-morbidities, as well as gender, age, TNM-stage, and tumour site were determined. Co-morbidities were also determined by a self-reported questionnaire. The mean observation period was 75±4 months among the survivors. Twenty-four deaths were observed.

Results: GHQ sum score, including a dichotomized version (HR 2.9), was predictive of survival, both directly and after adjustment for TNM stage, neuroticism, measured present heart and lung disease as well as a composite EORTC H&N35 score. The dichotomized GHQ sum score compared the 4th upper quartile to the three lower quartiles. Analyses demonstrated that a high risk group with 33% mortality may include only one quarter of the patient population as opposed to 12.5% mortality among the other patients.

Conclusion: Our findings indicate a survival prediction from GHQ sum scores in successfully treated HNSCC patients. Furthermore, GHQ scores may be a screening tool for identifying patients with high mortality risk.
Plenary Session 11: Integrating follow-up, late effects treatment and rehabilitation

Presentation number 11.1

The cost of success dealing with the consequences of cancer treatment

Key Note Speaker:
• Jane Maher, Macmillan Cancer Support, and Mount Vernon Hospital, United Kingdom

Around one in five of those who survive cancer can expect ongoing physical and psychological problems. Symptoms may persist after initial therapy or develop months or years later after a period of normal health, when neither the patient nor their health professional links them to previous cancer. For a significant minority the ongoing impact of cancer treatment can be devastating. Most consequences of cancer treatment do not have to be disabling and after appropriate specialist assessment and diagnosis can be managed effectively, often by patients themselves. However, a minority will have more complex problems requiring specialist multidisciplinary management. Recent estimates suggest that this will involve 5 – 10% of patients with common cancer types over a 20-year period.

The English National Cancer Survivorship Initiative (NCSI) is a partnership between the Department of Health and the charity Macmillan Cancer Support launched in 2007. As part of this initiative, a Consequences of Treatment workstream has delivered a programme of commissioned projects which will be completed in 2012/13. The programme has 5 priorities:

1. Consequences of cancer treatment are acknowledged and therefore described, measured, coded, enumerated and reported routinely by the NHS.
2. Preventable consequences are avoided through universal access to the safest and most effective treatments for cancer.
3. Where adverse consequences cannot be prevented, effective and accessible services are available to reduce functional impairment and alleviate distress.
4. The nature and content of the services provided is matched to need.
5. There is a continuing research and development programme to improve our understanding of the consequences of cancer and its treatment.


Presentation number 11.2

Symptom Experiences: A critical discussion about definition, assessment, and research practice

Key Note Speaker:
• Carol Tishelman, Karolinska Institute, and Research & Development Unit, Stockholm Sjukhem, Sweden

Despite major strides in assessment and treatment of many symptoms, I will argue here that we do not yet adequately address the spectrum of relevant symptoms experiences in people with cancer. One example of this is that some symptoms receive considerable attention whereas other common experiences are relatively neglected in both research and practice.

Cumulative experience from our research group, which focuses on cancer and palliative care, as well as the research of close colleagues, provides the empirical basis for this presentation. I will draw particularly upon data from a large-scale study of symptom experiences of 400 people with inoperable lung cancer, interviewed up to six times during the 1st year post-diagnosis, which was also the last year of life for most participants. Several structured assessment approaches were used, including the Symptom Distress Scale, the EORTC-QLQ-C30+LC13, & the Thurstone Scale of Symptom Distress (TSSD-LC). An open, inductive, structured freelisting question was used to assess that which was currently MOST distressing, and qualitative interviews were conducted with subsets of participants to better understand specific issues. Based on these and other data, I will critically discuss many of the assumptions and common practices related to how symptom experiences are defined, assessed, treated and researched.
A method to differentiate cancer prevalence by patients’ health status: the example of a population-based colorectal cancer patient sample in Italy

Purpose: To differentiate colorectal cancer prevalence in Italy according to cancer patients’ health status.

Methods: Data on all treatments, metastases, relapses and cause of death were collected by four Italian Cancer Registries following two approaches: a) cohort approach: 601 cases diagnosed in 2002 and followed up to December 31st 2007; b) period approach: 298 cases (diagnosed in 1997-2001) alive at January 1st 2007, followed for one year up to December 31st 2007. A 10-year-fictitious cohort of patients was created by applying the period approach results to the 2002 cohort. For every interval after diagnosis, it was possible to estimate the health status (of patients alive at the beginning of the year) 10 years after diagnosis. In this way we defined the health status of prevalent cases over 10 years, irrespectively to the year of diagnosis.

Results: The 10-year colorectal cancer prevalence cases can be subdivided in four groups:
- 74.7% free from any treatment/metastasis/relapse at the end of 10th year from diagnosis
- 8.1% dead due to colorectal cancer in one year
- 11.4% dead due to colorectal cancer in more than one year (but before the 10th year from diagnosis) or under treatment with disease at the end of their 10th year from diagnosis
- 5.8% dead due to other causes before the 10th year from diagnosis

Conclusions: We introduced a new method useful for estimating different health demands for people who experienced cancer. Cancer registry data are useful to quantify the amount of cancer patients after diagnosis according to their health status and needs.

Rehabilitation for Patients with High Grade Gliomas and their Relatives. A Feasibility Study

Purpose: CAREMORE is a population-based study to investigate the opportunity to collect, by cancer registries, psychological, nutritional and social aspects of rehabilitation.

Methods: Information on rehabilitation services (civil invalidity, home assistance, supports, psychological and nutritional rehabilitation) were provided by five Italian Cancer Registries (Genova, Varese, Reggio Emilia, Sassari, Ragusa), for a cohort of 900 cancer cases (300 breast and 600 colorectal cases), diagnosed in 2002 and followed up until 2007.

Results: New information sources were identified by cancer registries. Civil invalidity - an economic support - was provided to 39% of breast cancer sample (19% to patients dead by 2 years after diagnosis, 43% between 2nd and 5th, 41% to people alive 5 years after diagnosis) and to 38% of colorectal cancer sample (20% provided to people dead by 1 year after diagnosis, 47% to people dead between 1st and 5th, 33% to people alive 5 years after diagnosis). Home assistance provided to 9% of breast cancer patients sample (13% dead by 2 years after diagnosis, 40% between 2nd and 5th, 2% to people alive 5 years after diagnosis) and to 12% of colorectal cancer sample (9% to people dead by 1 year after diagnosis, 26% between 1st and 5th, 7% to people alive after 5 years after diagnosis). Facilities provided to 16% of breast cancer sample (14% to people dead by 2 years after diagnosis, 23% between 2nd and 5th, 15% to people alive 5 years after diagnosis) and 21% to colorectal cancer sample (15% to people dead by 1 year after diagnosis, 19% between 1st and 5th, 24% to people alive 5 years after diagnosis). Information on nutritional and psychological rehabilitation were difficult to collect.

Conclusions: The pilot study shows that Italian cancer registries can collect population-based information on economic support, home assistance and facilities but no data on nutritional and psychological rehabilitation.
related to the treatment. We lack evidence-based knowledge about how disease-and treatment-related symptoms and complications are experienced by and affect the patients and their relatives during and after treatment. Few rehabilitative intervention studies have been conducted in this patient group. The literature confirms that there is a need for a systematic evaluation of patients and relative’s needs in order to recommend national/international and disease-specific rehabilitative interventions for patients with gliomas and their relatives.

**Aim:** The Ph.D. project aims to elucidate patients and relatives life situation, needs, wishes and preferences for rehabilitative interventions during and after surgical and medical treatment for high grade glioma. Furthermore, the aim is to develop and test a rehabilitative intervention based on patient and family perspectives and research literature.

**Design:** The study will be conducted in 2 parts. Part 1 is a longitudinal, qualitative, explorative, and descriptive interview study of patients and their relatives’ life situation and rehabilitation needs and a quantitative evaluation of the patients health-related quality of life. Part 2 is a pilot study with a pre experimental one-group design testing a rehabilitative intervention program. The intervention program will be developed from existing intervention literature and the findings from part 1 of the study. The study takes place from 2012 - 2015. The theoretical framework is phenomenological and hermeneutic.

**Inpatient cancer rehabilitation following acute palliative care; initial outcomes from a national comprehensive cancer center.**

- Ki Shin, University of Texas MD Anderson Cancer Center, USA

Inpatient cancer rehabilitation can address complex medical issues and functional deficits in a challenging patient population. Acute inpatient palliative care can address complex medical issues and symptom burden for similar patients at the end of life. We will describe a unique population of inpatient cancer rehabilitation patients at the MD Anderson Cancer Center in Houston, Texas. Thirty-two patients from September 2005-August 2008 were referred from the acute palliative care unit for possible transfer to the acute inpatient rehabilitation unit at MD Anderson Cancer Center. After internal review board approval, the medical records of these patients were retrospectively reviewed for diagnosis, demographic data, Edmonton Symptom Assessment Score, degree of social support, length of stay, and discharge destination.

**Results:** General Demographic Data: Out of the total of 32 patients who were referred for evaluation 18 were male, 14 were female. Average age was 52.3 years. Ten of the 32 patients had non-small cell lung cancer: Sarcoma, GI, and GU cancers were the next most common with four patients each. Common rehabilitation diagnoses were gait abnormality (14 patients), spinal cord injury (9 patients), and asthenia (8 patients). Twenty-three out of the 32 patients had full time care giver support available. Patients who underwent inpatient rehabilitation: Eleven out of the 32 patients were accepted for transfer and subsequently underwent inpatient rehabilitation. Nine patients out of 11 were male. Two were female. Their average age was 57.2 years. These patients had a wide variety of cancer diagnosis. A common rehabilitation diagnoses was gait abnormality (6 patients). Nine out of the 11 patients had full time caregiver support. For these 11 patients, mean ESAS scores at the time of initial evaluation were the following: Pain 2.8, Fatigue 3.1, Nausea 0.4, Depression 2.8, Anxiety 2.5, Drowsiness 2.6, Appetite 2.9, Well-being 4.2, Dyspnea 1.5, Sleep 2.6. Average length of stay on the inpatient rehabilitation unit was 12 days. Eight out of the 11 patients were discharged home without hospice; two patients were discharge home with hospice. One patient was transferred back to the palliative care unit. Patients who did not undergo inpatient rehabilitation. Twenty-one of the thirty-two patients were not accepted for transfer for inpatient rehabilitation. Nine were male, and twelve were female. Their average age was 49.8 years. Non-small cell lung cancer was the most common cancer diagnosis (6 patients). Common rehabilitation diagnosis were gait abnormality (8 patients) and spinal cord compression (7 patients). 14 patients had full time care giver support available. For these 21 patients not transferred to the acute inpatient rehabilitation unit, mean ESAS scores at the time of evaluation were the following: Pain 3.2, Fatigue 4.1, Nausea 1, Depression 1.6, Anxiety 2.3, Drowsiness 2.7, Appetite 2.7, Well-being 3.1, Dyspnea 1.4, Sleep 2.6. Nine patients were discharged by the palliative care unit to home hospice, five patients to inpatient hospice, three patients expired in the hospital, two patients were discharged to a SNF, and two patients were discharged home without hospice.

**Conclusion:** After inpatient cancer rehabilitation more acute palliative care patients were discharged home without hospice (73% vs. 10%). At the time of evaluation for inpatient rehabilitation, no significant differences were found in mean ESAS scores between patients accepted and not accepted for acute inpatient rehabilitation. Inpatient cancer rehabilitation in a palliative care population with decreased symptom burden may be able to affect discharge disposition.

**Operable lung cancer patients experiences of rehabilitation and supportive needs at diagnosis. A qualitative study**

- Malene Miesel, Department of Thoracic Surgery 3151, Rigshospitalet, Denmark
- Carsten Hendriksen, Department of Public Health, University of Copenhagen, Denmark
- Jesper Holst Pedersen, Department of Thoracic Surgery 2152, Rigshospitalet, Denmark
- Marianne Tewes, The Heart Centre, Rigshospitalet, Denmark
- Lis Adamsen, Department of Public Health, Copenhagen University and University Hospitals Centre for Nursing and Care Research (UCSF), Denmark
Purpose: Lung cancer is one of the most frequently occurring cancers, and the cancer site with the highest rate of mortality. Lung cancer patients have complex problems through the disease trajectory and they are considered as disadvantaged when compared with other cancer patients. There are limited intervention studies. These studies have demonstrated promising results, but lung cancer patients’ needs during treatment trajectory still remain to be identified systematically. Present study is part of a ph.d. study ‘Four critical moments in everyday life during disease and treatment trajectory in operable lung cancer patients and relatives, and the significance of participation in an intervention consisting of physical exercise’. The ph.d. study is part of The Center for Integrated Rehabilitation of Cancer Patients – CIRE. Purpose of present study is to explore lung cancer patients’ challenges, needs, problems and the management of symptoms at diagnosis in order to expose diagnosis interference in everyday life.

Methods: A sample of 20 patients are planned to be included. Inclusion criteria are diagnosis of non small cell lung cancer referred for surgery at department of thoracic surgery, Rigshospitalet and age above 18. Individual in-depths interviews combined with validated questionnaires with a phenomenological approach are conducted five days following diagnosis. Focus is the present and deals with themes of patients’ experiences with the diagnosis and everyday life, motivation in relation to behavior and life style. There will be follow-up interviews and questionaires 14 weeks post surgery focusing on the patients return to everyday life.

Results: The study is an ongoing study started up in february 2012, and 11 patients have subsequently been included. Results are expected to be published at the end of 2012.

Conclusion: Findings are expected to contribute to the development and initiation of further interventions for lung cancer patients early in the disease and treatment trajectory.

Poster number: 107

Information needs of cancer outpatients and their significant others

- Nanna Friðriksdóttir, Landspítali University Hospital, University of Iceland, Iceland
- Þórunn Sveinsdóttir, Landspítali University Hospital, Iceland
- Þórunn Sævarsdóttir, Landspítali University Hospital, Iceland
- Sigríður Gunnarsdóttir, Landspítali University Hospital, University of Iceland, Iceland
- Þóra Þórsdóttir, Landspítali University Hospital, Iceland
- Þórunn Sævarsdóttir, Landspítali University Hospital, Iceland

Patient education is an important part of cancer rehabilitation and multiple information needs are well known. Since 2000 cancer outpatients starting chemotherapy/radiation at Landspítali receive individualized information supported in the form of a notebook containing information leaflets on treatment and side-effects, self-care, services in- and outside the hospital, and when and how to contact health care providers (HCP). Earlier surveys conducted in 2000 and 2005 have shown that 80-90% of patients are satisfied with the notebook but little is known about the degree to which information needs are perceived to have been met.

Purpose: To examine whether outpatients receiving chemotherapy/radiation and their relatives receive too little, adequate or too much information; satisfaction with the cancer notebook; satisfaction with opportunities, time and setting for discussions with HCP.
Method: A self-report questionnaire designed for this survey was completed by 363 outpatients and 65 relatives. It measures the degree to which 22 information needs are met and the degree of satisfaction with the notebook, opportunities, time, and setting/privacy for discussion.

Results: The majority was satisfied with the cancer notebook (91%) and with time, opportunities and setting (89%) for discussion. Adequate information was received by ≥70% about cancer treatment, side-effects, body image, fertility, exercise, services of psychology and social work, support outside the hospital and where to go when something occurs at home. None had received too much information, but 30-50% had received too little information about nutrition and use of vitamins/supplements, home services, symptoms to watch for at home, social resources, effects on family and relationships/marriage, support for relatives, relaxation, psychological wellbeing and sexual functioning. Significantly more relatives than patients received too little information about treatment, psychological well-being and resources, and the services of psychology.

Conclusion: The results provide guiding information about where information for patients, relatives, and collaboration can be improved.

Sexuality and Cancer: A project integrating oncosexology into cancer care

- Nanna Friðriksdóttir, Landspítali University Hospital, University of Iceland, Iceland
- Jóhna Ingibjörg Jónsdóttir, Landspítali University Hospital, Iceland
- Þóra Þórsdóttir, Landspítali University Hospital, Iceland
- Agnarður Sverrisdóttir, Landspítali University Hospital, Iceland
- Sigríður Gunnarsdóttir, Landspítali University Hospital, University of Iceland, Iceland

Cancer and its treatment can affect sexual health. In an Icelandic study >50% of patients had problems in relation to body image, sexual interest and performance during chemotherapy (Saevarsdottir et al, 2010) but little is known about practices and attitudes of Icelandic health care providers towards sexuality cancer-related issues. With the support of two pharmaceutical companies a 2-year project was started at the end of 2010 with the purpose of integrating oncosexology into cancer care at Landspítali.

Purpose: To evaluate the effectiveness of the integration by assessing the attitudes and practices of nurses and physicians towards cancer-related sexual health issues.

Method: A pre-post one group evaluation was conducted to assess the effectiveness of the intervention. A sexuality counselor was hired for weekly consultations and a team from medical, surgical and gynecological oncology was formed. Key staff members identified to act as change agents attended a workshop at baseline and a year later. Educational meetings were held on wards, staff pocket-guides and patient information leaflets were developed. A website was launched for the project. A translated (Hatamäki et al, 2007) and adapted questionnaire assessing practices and attitudes was mailed electronically to health professionals at baseline (T1, N=206), 11 months (T2, N=216) and 17 months (T3, N=210).

Results: At all time points the majority of participants agreed that it is a part of the job to discuss sexual health issues with cancer patients. The intervention seems to be effective since scores on assessing and discussing sexual health issues increased significantly from T1-T3 and from T2-T3, as well as scores on the provision of patient education material and referrals to sexual-health professionals. Scores also increased significantly from T1-T3 and T2-T3 on having enough knowledge and from T1-T2 and T1-T3 on having enough training to discuss sexual health.

Conclusion: The project has been successful in changing practice and is still ongoing. Further assessment will be based on a fourth staff survey, chart documentation and the practices of the sexuality counselor.

Pain prevalence, severity, and interference in hospitalized cancer and palliative patients

- Sigríður Zoega, Landspítali - The National University Hospital of Iceland, Iceland
- Nanna Fridriksdottir, Landspítali - The National University Hospital of Iceland, Iceland
- Svandis Iris Hafldanardottir, Landspítali - The National University Hospital of Iceland, Iceland
- Sigríður Gunnarsdóttir, Landspítali - The National University Hospital of Iceland, Iceland

Purpose: Pain is a common symptom in both cancer and palliative patients. The purpose of the study was to assess pain prevalence, severity, and interference with physical function, sleep, and emotions in hospitalized cancer- and palliative patients.

Methods: A point prevalence study was conducted in two palliative, one hematology, and one oncology department in a university hospital in January (T1) and November (T2) 2011. Data were collected with a questionnaire (APS-POQ-R) assessing pain severity, pain interference, and quality of pain management. Participants had to be 18 years or older hospitalized for at least 24 hours, speak Icelandic, alert, and able to participate.

Results: Participants were 43 at T1 and 39 at T2, 82 in total. The response rate was 77%. Pain prevalence was 85.0% in the past 24 hours, 16.3% had moderate pain, but 32.5% experienced severe pain. The mean (SD) worst pain severity on a 0-10 scale was 4.5 (3.3) in the past 24 hours. The mean (SD) interference from pain with physical function on a 0-10 scale was 2.8 (2.7), but 2.3 (2.5) with emotional functioning. Moderate to severe interference from pain with physical function and sleep was experienced in 17.1% patients, but with emotional functioning in 11.0%. The highest mean (SD) interference with physical functioning was with the ability to walk and sit 3.8 (3.5) but anxiety was the emotion most severely affected by pain 2.8 (2.8). No difference was found in any of the variables between the two time points.
Conclusion: This study will contribute to establishing rehabilitation and surgery with focus on exercise training initiated immediately after diagnostic surgery for non-small cell lung cancer patients.

Results: The results of PROLUCA will identify the optimal perioperative rehabilitation in patients with operable lung cancer with focus on exercise training.

Methods: Using a 2x2 factorial design with continuous effect endpoint (VO2peak), 380 subjects (95 patients/study arm) with histological evidence of non-small cell lung cancer (NSCLC) at disease stage I-IIIA, referred for surgical resection at Department of Cardiothoracic surgery RT, Rigshospitalet, will be randomly assigned to one of four groups (three intervention groups and one control group): (1) Preoperative and postoperative rehabilitation initiated two weeks after surgery; (2) Preoperative and postoperative rehabilitation initiated six weeks after surgery; (3) Postoperative rehabilitation initiated two weeks after surgery; (4) Today’s standard care, which is postoperative rehabilitation initiated six weeks after surgery. The preoperative rehabilitation program consists of an individually designed, 30 minutes daily, home exercise program. The postoperative rehabilitation program consists of a supervised group exercise program comprising resistance and cardiovascular training two hours weekly for 12 weeks (exercise intensity at 60-90% of VO2peak) combined with individual counseling. The primary study endpoint is VO2peak (direct measurement). Secondary endpoints include: Perioperative complications (registered prospectively up to 30 days after surgery), 6 MWT, 1 RM, patient-reported outcomes (e.g., quality of life, fatigue, depression, lifestyle etc.), hospitalization time, sick leave and work status, and survival. All endpoints will be assessed at baseline, the day before surgery, and postoperatively, at week 20 and 52.

Results: The results of PROLUCA will identify the optimal perioperative rehabilitation for non-small cell lung cancer patients with focus on exercise training initiated immediately after diagnosis and surgery.

Conclusion: This study will contribute to establishing rehabilitation guidelines for operable NSCLC patients.

Feasibility, safety and benefits of exercise and health counseling in patients with acute leukemia undergoing chemotherapy during outpatient management - A pilot study

Aim: To investigate the feasibility, safety and potential benefits of a 6 week supervised and structured exercise and health counseling intervention in patients with acute leukemia undergoing consolidation chemotherapy during outpatient management.

Methods: A two-center, prospective pilot intervention trial.

Outcome measures: Physical capacity and functional performance was measured by the 6 minute walk distance (6MWD), sit to stand test (SST) and the biceps arm curl (BAC). General wellbeing was assessed using the Short Form Health Survey (SF-36), health-related quality of life (HRQOL) by the Functional Assessment of Cancer Therapy-Anaemia scale (FACT-An) and symptom prevalence, severity and interference was assessed by the MD Andersen Symptom Inventory (MDASI). Measurements were at baseline (after induction/prior to consolidation) and upon completion of the intervention (after 6 weeks).

Results: Seventeen of the twenty patients with acute leukemia recruited in the outpatient clinics completed all study requirements (85%). Intervention adherence was 73% for the supervised intervention and compliance to wearing the step counter was 85%. There were significant improvements in all physical capacity and functional performance tests: 6MWD (p=0.0013), SST (p=0.0062) and the right and left BAC (biceps) tests (p=0.0002) and (p=0.0002), respectively. The psychometric tests showed significant improvements in HRQOL (p=0.0209) (Total FACT-An), and in vitality (p=0.0015) and mental health (p=0.0471) (SF36). The symptom burden (MDASI) was significantly reduced at post testing (p=0.0021) with a significant reduction in symptom interference on daily life activities (p=0.0069). No adverse reactions that could be attributed to the intervention were observed.

Conclusions: The exercise and health promotion intervention proved feasible, safe and well tolerated in patients with acute leukemia undergoing intensive chemotherapy in an outpatient clinical setting. This pilot study raises the hypothesis that a multifaceted exercise-based nonpharmacologic intervention provides multidimensional improvements in physical and functional capacity, HRQOL, vitality and mental wellbeing, and reduction in the symptom burden especially fatigue, and decreases symptom interference in patients daily life function. These findings need to be confirmed in a larger sample presently being carried out as a randomized controlled trial ‘PACE-AL’ (clinical trials registration NCT01 404520).
Tumor progression and dissemination in malignant melanoma: psychological issues in psychosocial care

- Péter Kovács, National Institute of Oncology, Hungary
- Gitta Pánzél, National Institute of Oncology, Hungary
- Kinga Borbola, National Institute of Oncology, Hungary
- Ágnes Riskó, National Institute of Oncology, Hungary
- Gabriella Liszkay, National Institute of Oncology, Hungary
- Ágnes Riskó, National Institute of Oncology, Hungary
- Gitta Pánczél, National Institute of Oncology, Hungary
- Péter Kovács, National Institute of Oncology, Hungary
- Gabriella Liszkay, National Institute of Oncology, Hungary

Background: Cancer has severe psychosocial impact involving not only the patients, but their relatives and caregivers, as well. Psychosocial support is necessitated by the ever increasing incidence of melanoma, well demonstrated by the annual 400 new cases diagnosed in the National Institute of Oncology (Budapest).

Purpose: According to chronic stress-related mechanisms and other neurobiological aspects, the deeper psychological contents, like coping mechanisms, general psychological preparedness, social support, etc. may have an influence on tumor progression.

Methods: In a longitudinal study with tumor-free, high risk melanoma patients treated with adjuvant interferon the possible relationship between the psychological constructs and the primary tumor characteristics and the progression rate was examined.

Results: In our sample (N= 49) increased level of distress (Beck Depression Inventory and State Trait Anxiety Inventory) were found. The extent of social support and the thickness of primary tumor (Breslow-scale) showed significant negative correlation (p<0.05), just like the trait-anxiety and the thickness (p<0.05). We also found significant negative correlation between social support and illness intrusiveness, and the level of anxiety (p<0.05). There were significant (t=2.789, p<0.01) differences in the anxiety patterns of men and women, but in other psychological constructs no differences were found.

Conclusion: Treatment may result in longer symptom-free survival providing better quality of life. Social support may be an important field of psychological intervention. Exploration of the possible role of psychosocial preparedness requires further long term research.

Keywords: onco-psychology; psycho-oncology; malignant melanoma; interferon; psychosocial; social support

A qualitative study of needs assessment instruments in cancer rehabilitation. Patient and general practitioner perspectives.

- Susanne Thayssen, National Research Center for Cancer Rehabilitation, The Research Unit for General Practice, University of Southern Denmark, Denmark
- Helle Ploug Hansen, Research Unit Health, Man and Society, University of Southern Denmark, Denmark
- Palle Mark Christensen, Lægerne Lærkevej 14, Denmark

The necessity for systematic assessment of cancer patients’ rehabilitation needs several times along the cancer trajectory is underlined, amongst many others, by the Danish National Board of Health. Validated tools or questionnaires including all dimensions of physical, psychological, social and existential problems are recommended.

Purpose: To generate knowledge about the use of a patient questionnaire when assessing cancer patients’ needs for rehabilitation. - How do cancer patients experience answering a questionnaire at home in preparation for a consultation about rehabilitation? - What impact does a questionnaire have on the communicative interaction between patient and doctor? - How do cancer patients experience using a questionnaire in the consultation? - How do general practitioners perceive the use of this kind of tool when assessing the rehabilitation needs of cancer patients?

Methods: A number of general practitioners are asked to use a patient questionnaire for needs assessment of cancer patients: the Distress Thermometer and problem list along with the Impact Thermometer. Data generation will include participant observation of 10 consultations where the questionnaire is being used and individual interviews with 20 cancer patients and 10-15 general practitioners about their experiences with the use of the questionnaire. The analysis process will involve a conceptual framework for patient-professional communication (D. Feldman-Stewart et al.) and data will be analyzed according to Malterud’s systematic text condensation method.

Results: Data generation is ongoing until fall of 2013. The study design is to be discussed at the symposium.

Conclusion: We expect this study to generate new and important knowledge about how the use of instruments during needs assessment is experienced by the users: patients and doctors. Study results will be useful during development of clinical guidelines and implementation in the clinical setting.

Hand in Hand. Psychological intervention for women newly diagnosed with cancer and their partners. A randomised controlled trial.

- Anne Nicolaisen, Research Unit of General Practice, University of Southern Denmark, Denmark
- Henrik Flyger, Breast Surgery Department, Herlev University Hospital, Denmark
- Anne Pedersen, Brystkirurgisk Afdeling, Ringsted Sygehus, Denmark
- Mariët Hagedoorn, Department of Public Health and Health Psychology, Graduate School for Health Research, University of Groningen, The Netherlands
A diagnosis of breast cancer affects both the patient and her partner. Partners can be a great resource and provide emotional and practical support during treatment and rehabilitation. However, it can be difficult for the patient to express her needs. For the partner, it may be challenging to support her and take care of her needs while at the same time having needs of his own.

Purpose: This RCT evaluates whether a psychological intervention can enhance psychological well-being and reduce symptoms of distress in couples dealing with breast cancer.

Methods: A total of 220 women recently diagnosed with primary breast cancer and their cohabiting partners will be randomised to the intervention group or the control group that receives current hospital practice. Couples are recruited at three departments of breast surgery in Denmark (Odense, Ringsted and Herlev). The intervention is based on attachment theory (Bowlby, Ainsworth) and consists of six to eight couple sessions conducted by an experienced psychologist. The sessions take place one to five months after the operation date. The psychologist advises and supports the couple to talk about and respect each other’s feelings regarding their new life situation with cancer. The intervention will support the couple in strengthening an emotional bond and thereby reduce distress and enhance psychological well-being. Data from patients and partners will be obtained by questionnaires at baseline and at 5 and 10 months follow-up.

Results: Enrollment is expected to last until December 2012. At the symposium study design and participation rate will be presented and discussed.

The effect of adaptation training on coping of parents of children with cancer

• Jarmo Väliminä, Turku University of Applied Science, Finland
• Marjo Salmela, Turku University of Applied Science, Finland
• Raija Numminen, Turku University of Applied Science, Finland
• Teija Kemppainen, Southwestern Finland Cancer Society, Finland
• Kari Ojala, Southwestern Finland Cancer Society, Finland

Purpose: The purpose of this study is to gain knowledge on how the adaptation training course supports the coping of families with children with cancer. The two-part adaptation training course consists of courses which provide information on cancer-specific topics, provide professional and peer support and focus on the holistic rehabilitation of cancer patients and their families.

Methods: The data were collected in two stages. During the first part of the adaptation training course, eight parents were interviewed using theme interviews which focused on the parents’ notions and experiences of coping skills and mechanisms as well as the overall care pathway. After the second part of the course the same parents were given a questionnaire which comprised similar questions on coping and the perceived effect of the course on coping. The data will be analysed using content analysis. The results of the two sets of data will then be compared to assess the impact of the course on the coping experienced by the parents and to revise the course programme.

Results: The data analysis is incomplete and no definitive results can be presented in this abstract. The preliminary analysis would seem to suggest that parents saw “coping” mainly as the ability to maintain everyday functions and as a sense of safety and harmony. Peer support seems to be the main form of support the parents were expecting to get from the course. The results will be presented in the symposium.

Conclusion: No conclusions can be drawn at this moment.
Abstracts

Poster number: 117

Focus of Care for an Individual with Metastatic Thymoma to the Spine and Incomplete Paraplegia: A Case Study

- Vishwa Raj, Carolinas Rehabilitation, USA

Purpose: Individuals with positive prognosis and long term survival for spinal cord tumors often have difficulty regarding care as it relates to coordinating their oncological and rehabilitation treatment plans. Families are often responsible to help provide such care in the home setting. The purpose is to review areas of focus for clinical care and social support at home for families, and to explain how to accommodate patient needs using resources available in the US.

Methods: Retrospective chart review consolidating clinical information with outpatient plan of care.

Results: The clinical plan of care will be outlined that specifically addressed bowel and bladder dysfunction, skin care, nutrition, mobility needs, coordination of oncological treatment with rehabilitation therapies, and methods to incorporate family to help provide support at home.

Conclusion: For individuals with spinal cord tumors, long term rehabilitation and oncological plans of care should be focused to address the clinical and social needs of patients and their families in the home setting.

Poster number: 118

An Avalanche of Ignoring - A Qualitative Study of Health Care Avoidance in Women With Malignant Breast Cancer Wounds

- Betina Lund-Nielsen, Rigshospitalet, UCSF afsnit 9701, Denmark
- Julie Midtgaard, Rigshospitalet, UCSF, Denmark
- Mikael Rørth, Rigshospitalet, Onkologisk klinik, 5074, Denmark
- Finn Gottstrup, Bispebjerg Hospital, Wound Healing Center, Denmark
- Lis Adamsen, Rigshospitalet, UCSF, Denmark

Background: A contributing factor to development of malignant wounds is patient-related delay caused by health care avoidance.

Objective: The purpose of this study was to describe the experience of health care avoidance in women with advanced breast cancer who have developed malignant wounds.

Methods: A qualitative study was conducted based on semi-structured interviews. Seventeen women with advanced breast cancer (median age, 69 years; range, 47-90 years) who had avoided medical treatment despite development of malignant wounds participated. Systematic text-condensation analysis was used.

Results: The women deliberately avoided health care for a median of 24 months (minimum, 3 months; maximum, 84 months). Despite being aware of the development of a malignant wound from a breast lump, the women avoided health care because of negative health care experiences and extremely burdening life situations. The women did not seek health care until their situations became unmanageable. The essence “An avalanche of ignoring” is pointing to the escalating, powerful development of destructive feelings behind health care avoidance.

Conclusions: Health care avoidance may be a way of coping both for women who are primary and/or bereaved caregivers. Oncologists and nurses may contribute to the prevention hereof by means of information about the early signs of cancer, benefits of early diagnosis and treatment, and by paying special attention to these women who may be at high risk for avoidant behaviours.

Implications for Practice: In a preventive perspective, it seems advantageous to bring into focus the health of primary and bereaved caregivers, thereby potentially reducing patient delay and ultimately improving survival.

Poster number: 119

Men’s reflections on participating in cancer rehabilitation: a systematic review of qualitative studies 2000-2011

- Charlotte Handberg, University of Aarhus, Department of Public Health, Section of Clinical Social Medicine, Denmark
- Claus Vinther Nielsen, University of Aarhus, Department of Public Health, Section of Clinical Social Medicine, Denmark
- Kirsten Lomborg, University of Aarhus, Department of Public Health, Section of Nursing Science, Denmark

Objective: This paper reports on a systematic review of qualitative studies on men’s reflections on participating in cancer rehabilitation.

Methods: Nine databases were systematically searched to identify qualitative papers published between 2000 and 2011. Papers were selected by pre-defined inclusion criteria and subsequently critically appraised. Key themes were extracted and synthesised.

Results: A total of 1151 papers were identified in the initial search. Fifteen papers were selected for the final review and represented in a review matrix. Four central themes were identified in the analytical process: ‘changed life perspective’, ‘the masculinity factor’, ‘a desire to get back to normal’ and ‘the meaning of work’. Six peripheral themes were identified: ‘the meaning of context’, ‘music’, ‘physical training’, ‘religion’, ‘humor’ and ‘the unmentionable’. The themes were synthesised into an integrative model representing men’s reflections on participating in cancer rehabilitation.

Conclusion: The existing qualitative literature offers an insight into men’s reflections on cancer rehabilitation and highlights the interrelationship between men’s reflections on their changed life...
Purpose: Breast cancer survivors (BCSs) have an increased risk of unemployment and early disability pension. However, work data on BCSs with various stages of breast cancer is missing. We have previously reported that 84% of BCSs stage I were working at a mean of 4.2 years after primary treatment. In this study this sample was examined again 8.8 years after treatment in order to study changes in work status and predictors for continued participation in work life.

Methods: 249 BCSs stage I, treated with surgery and radiotherapy, presented a valid questionnaire in 2004 concerning work issues, socio-demography, physical and mental health and quality of life (QoL). In 2009 169 of them (68% response rate) completed a similar questionnaire. BCSs working and not working was compared at both time points, and the 2004 variables were used to predict work status in 2009. In 2009 130 matched cancer-free individuals was examined.

Results: The proportion of working BCSs was significantly reduced from 80% in 2004 to 67% in 2009, with a corresponding significant increase of disability pension from 15% to 26%. In multivariate analyses older age, lower level of neuroticism, no comorbidity, and good overall work ability in 2004 were significant predictors of being at work in 2009. In 2009 the BCSs hardly differed from their matched population-based controls.

Conclusion: In BCSs stage I treated by surgery and radiotherapy only, participation in work life is high at long-term follow-up, and does not differ from that of cancer-free normative controls. Health personnel should check mental distress and comorbidity since these factors have a negative effects on long-term work ability.

Practice implications: Further research-based knowledge is needed to explore a) the underlying causes and patterns of the men’s needs, preferences and choices in cancer rehabilitation and b) the health professional perspective on male cancer rehabilitation.

Keywords: cancer, rehabilitation, men, qualitative research, review
might also affect health-related quality of life (HRQoL) and anxiety and depression levels of cancer survivors. The objective was to obtain insight into the causal relationship between information provision and HRQoL, anxiety and depression among lymphoma and multiple myeloma cancer survivors.

Methods: The population-based Eindhoven Cancer Registry was used to select all patients diagnosed with lymphoma and multiple myeloma between 1999-2009. The EORTC QLQ-INFO25, EORTC QLQ-C30 and HADS were completed one by 1,341 survivors (69%). Subsequently 412 survivors completed these questionnaires again one year later.

Results: Preliminary results show that higher satisfaction with the received information was associated with better mental and physical HRQoL and lower levels of anxiety and depression. The receipt of more disease-related information was associated with lower levels of anxiety and depression, while the receipt of more information about the treatment and other services was associated with worse HRQoL and higher levels of anxiety and depression. Also, satisfaction with the received information at baseline predicted HRQoL 1-year later; however the explained variances were low.

Conclusion: Optimal, tailor-made and repeated information provision will lead to improved patient satisfaction and HRQoL. Implementation of survivorship care plans could contribute to the improvement of information provision.

Poster number: 123

**Early rehabilitation of cancer patients**

- Inger Thomodsen, Haukeland University Hospital, Dept of Oncology and Medical Physics, Cancer Centre for Educational and Rehabilitation, Norway
- Cecilia Arving, Uppsala University, Dept of Public Health and Caring Sciences, Norway
- Guri Brekke, Haukeland University Hospital, Dept of Oncology and Medical Physics, Cancer Centre for Educational and Rehabilitation, Norway
- Sveinung Berentsen, University of Agder, Dept of Public Health, Sport and Nutrition, Faculty of Health and Sport Sciences, Norway
- Karin Nordin, University of Bergen, Dept of public Health and Primary Health Care, Norway

Purpose: A life threatening disease such as cancer may lead to post-traumatic stress disorder, and even when reporting low levels of side-effects from cancer disease and treatment, 80% report high levels of stress symptoms. The purpose of the present randomised controlled trial which started autumn 2011, is to examine the psychosocial effects of a stress management intervention based on cognitive behaviour therapy and with focus on increased physical activity in patients with various cancer diagnoses using a stepped-care approach.

Method: When using a stepped-care approach it is possible to study the level and intensity of stress management intervention required to achieve increased well-being. A cost-utility analysis will also be performed. 300 adult patients with a recent diagnosis of breast-, colorectal- prostate, testicular cancer or lymphoma and scheduled for adjuvant and/or curative oncologic treatment at Haukeland University Hospital, will be consecutively included in the prospective intervention study. The patients will be randomized to intervention or control. In step 1, all patients in the intervention group (I-a) will receive 2 counselling sessions. Patients who report clinically significant levels of stress, such as intrusive thoughts/avoidance behaviour (measured by Impact of Event Scale) and/or worry and depressions (measured by Hospital and Depression Scale) will be included in Step 2 (I-b) and include another 4-7 counselling sessions. There will also be a focus on motivating to increase physical activity level. Both the intervention (I) and control group (C) are allowed to take part in the common rehabilitation program with patient education and physical training. Data will be collected with self-reported standardized questionnaires. Objectively measures of physical activity level, sleep and daily energy expenditure are recorded with SenseWear™ Pro3 Armband. Measure point is at inclusion and then after 6 week, 4, 8, 12 and 24 month.

Poster number: 124

**Physical activity of women after breast cancer treatment**

- Iwona Malicka, Academy of Physical Education in Wroclaw, Poland
- Katarzyna Pawlowska, Academy of Physical Education in Wroclaw, Poland
- Marek Woźniewski, Academy of Physical Education in Wroclaw, Poland

Purpose: Physical activity is an important element of a healthy lifestyle. The importance of primary prevention is to inhibit the development of lifestyle diseases, including cancer. In the case of secondary prevention of women after breast cancer treatment may in turn minimize the consequences of treatment. The aim of this study was to assess the level of physical activity of women after breast cancer treatment.

Methods: The study was divided in 2 groups. The first consisted of 21 women after breast cancer treatment with a mean age 60.8 years (± 7), average body height was 160.4 cm (± 5.5), and the mass body: 74.2 (± 11.1). In 14% of women were conserving surgery and the remaining 86% mastectomy. In addition, 91% of the women underwent adjuvant: hormonotherapy (53%), chemotherapy (68%) and radiotherapy (47%). The second group (the control) consisted of 20 women with a mean age of 60.7 years (± 5.5), which have never been treated for cancer. Average body height was: 161.8 (± 4.2), average body weight: 64.9 (± 6.6). In all patients, women were assessed levels of physical activity using pedometers Connect Silva EX3. The device recorded the daily number of steps, calories and distance.

Results: Women in the study group received an average number of steps at 7669.8, while women in the control group - 6594. Distance covered in the first group averaged 4672.2 m, while in the second group achieved a score of 4825.5 m. Average number of burned calories was very similar in both groups, respectively: 129.5 to 137.4. The results did not differ significantly. In
addition, healthy women have shown the relationship between the level of physical activity undertaken and the age and body mass, which was not detected in the study group.

Conclusions: Women after breast cancer treatment showed a low level of physical activity but not differing significantly from the healthy women the same age.

Physical capacity of women after breast cancer treatment

Katarzyna Pawlowska, Academy of Physical Education in Wroclaw, Poland
Iwona Malicka, Academy of Physical Education in Wroclaw, Poland
Marek Wozniewski, Academy of Physical Education in Wroclaw, Poland

Purpose: As a result of breast cancer treatment, there are many undesirable consequences on the part of the circulatory system, nervous system, respiratory and muscular systems. These disorders affect the physical capacity, the ability to make long-term effort without disturbances in the body.

Methods: There were examined 55 women after breast cancer treatment at the age 45 to 77 years. They were divided into three groups: first-control (no exercises), second (exercises in the pool) and third (training Nordic Walking). All women were examined twice on the treadmill (with Bruce protocol): before training and after 8 weeks. Exercises in the pool were twice a week for 45 min. and Nordic Walking training - twice a week for 60 min.

Results: In all exercisers improved capacity to exercise. In the group exercise at the pool capacity increased by 22%. The minimum value of MET in the initial study was 2.9 and after 8 weeks of exercise 5.6. In the group trained Nordic Walking capacity increased by 20%. The minimum value of MET in the initial study was 2.9 and after eight weeks of training 4.2.

Conclusions: Physical capacity significantly increases after exercise (activity). Type of the exercise (walking training, exercises to increase efficiency) was no significant on the growth of physical fitness.

Feasibility and efficacy of progressive resistance training and dietary supplements in radiotherapy treated head and neck cancer patients

Simon Lønbro, Dept. of Experimental Clinical Oncology Aarhus University Hospital, Denmark
Ulrik Dalgas, Dept. of Public Health, Sect. for Sports Science, Aarhus University, Denmark
Hanne Primdahl, Dept. of Oncology Aarhus University Hospital, Denmark
Jens Overgaard, Dept. of Experimental Clinical Oncology Aarhus University Hospital, Denmark
Kristian Overgaard, Dept. of Public Health, Sect. for Sports Science, Aarhus University, Denmark

Background: Patients with head and neck squamous cell carcinomas (HNSCC) often lose a considerable part of muscle mass following the disease and treatment. This is an independent mortality predictor, lowering muscle strength and functional performance. Progressive Resistance Training (PRT) effectively induces muscle hypertrophy among healthy individuals and various
Rehabilitation with focus on weight reduction among overweight breast cancer survivors

• Tina Broby Mikkelsen, Rehabilitation Centre Dallund, Denmark
• Karen Mark, Rehabilitation Centre Dallund, Denmark
• Hanne Svendsen, Rehabilitation Centre Dallund, Denmark

Methods: Rehabilitation Centre Dallund had offered rehabilitation to cancer survivors as a 6-days residential program since 2001. The program consists of physical, psychological, social, work related and existential issues. In 2011 we developed a special program for overweight breast cancer survivors with focus on weight reduction. The key focus was to work with their motivation to change habits by use of cognitive therapy tools, communicate knowledge and let the women try a healthy lifestyle for a week.

Results: The program is varied between lectures, group based dialogs, individual consultations and physical activity. The first 6 days consisted of two sessions with focus on motivation and change of habits, physical activity, session with a dietician, mindful eating, individual activities and work out their own action plan for the future. The two days of follow-up had focus on the women’s experience of acting up to their action plan after ten weeks at home, there were a psychologist group session, a workshop about existential issues, individual activities, mindfulness and physical activity. In this residential program the women not only heard about healthy living, they were physical active and healthy diet was served.

Conclusion: This program motivated the women to change habits and lose weight. Furthermore they reported that an active and healthy lifestyle increased their well-being.

Poster number: 128

Rehabilitation with focus on weight reduction can motivate overweight breast cancer survivors to change habits and lose weight

• Tina Broby Mikkelsen, Rehabilitation Centre Dallund, Denmark
• Karen Mark, Rehabilitation Centre Dallund, Denmark
• Hanne Svendsen, Rehabilitation Centre Dallund, Denmark

Purpose: To assess if a 6-days rehabilitation program can motivate overweight breast cancer survivors to increase physical activity, reduce their weight and experience fewer late effects.

Methods: Rehabilitation Centre Dallund is offering rehabilitation to cancer survivors as a 6-days residential program. The program consists of physical, psychological, social, work related and existential issues. In two weeks in 2011 the focus of all issues was weight reduction for breast cancer survivors. There were two days follow-up ten weeks after. Before each of the two stays, the women received questionnaires about their weight, diet, physical activity and late effects. Each stay was evaluated by the women. They will be send questionnaires 6 months after the first stay.

Results: 37 breast cancer survivors participated in the first stay and 32 in the second (86%). All women were overweight, mean BMI was 31.7. More than 90% was motivated to lose weight, inspired to change their diet and increase their physical activity. Preliminary results show that more women reported strenuous exercise and that the number of self reported late effects was significantly reduced from the first to the second stay. Furthermore the participants had lost 2.9 kg in average from the first to the second stay. At the symposium data from 6 month follow up will be presented.

Conclusion: It seems that our 6-days rehabilitation can motivate overweight breast cancer survivors to change habits and lose weight. Furthermore the women experienced advantage of trying a healthy lifestyle in practice in this residential program.
Evaluation of a 3-days follow-up stay three months after a residential rehabilitation stay

Purpose: Rehabilitation Centre Dallund (rcDallund) has offered rehabilitation to cancer survivors as a 6-days residential program since 2001. All participants work out a plan for the future at the end of the stay. The purpose of this study is to evaluate the cancer survivor’s evaluation of a 3-days follow-up stay, especially:

- Does the follow-up stay motivate the participants to work with their plan for the future?
- Did they work with their plan for the future between the two rehabilitation stays?
- To what extent the participants needed advice, support or adjustment of their plan for the future

Methods: The rehabilitation program consists of physical, psychological, social, work related and existential issues. A qualitative study has shown that some participants find it difficult to come home after the stay and use the achieved knowledge. Furthermore there has been a demand for a follow-up stay among the cancer survivors since 2001. Therefore a 3-days follow-up stay three months after was planned for 11 courses in 2012. There were 186 participants in the first stay. All participants filled in a distress scale before each stay and an evaluation form at the end of the stay.

Results and conclusion: The follow-up stays are scheduled from April to May 2012. The results will be presented at the symposium.

Support for rehabilitees and their significant others during cancer rehabilitation

The purpose of the study was to describe the support provided to rehabilitees and their significant others during cancer rehabilitation.

The data were collected of cancer patients and their significant others (N=129) using theme interviews. The data were analysed using inductive content analysis. In the analysis of the quantitative data, each instrument was analysed separately focusing on the changes in coping.

Results: Brain tumour patients and their significant others experienced adaptation training as positive and very significant. The adaptation training course supported the mental well-being of the rehabilitee, provided information about the disease, provided significant others with the abilities needed in supporting the rehabilitation process, provided a more profound understanding about cancer, provided information about how cancer treatment effects one’s life and how to manage the effects, and supported coping with daily life and work. The support helped participants in reacting and adapting to the disease. The most important forms of support were peer support and the opportunity to be refreshed.

Conclusion: Adaptation training is a significant part of the rehabilitation of a cancer patient. The benefits of the training can be seen in the improved coping of cancer patients and their significant others and their adaptation to the disease. Adaptation training supports independent coping and returning to work.
gist and nurses. It encouraged the participants to talk about cancer as a disease, helped alleviate the insecurity they live with and encouraged them to make plans for the future. Lectures on couple relationships and emotions were considered important, but the participants took part in discussions as active listeners. The participants felt that it was difficult to broach sexuality, discuss the related problems or receive support and that the topic was not dealt with extensively.

Informational support included providing up-to-date information about cancer as a disease, the forms of treatment and their side effects, the prognosis and the importance of nutrition and physical exercise for a cancer patient. The information provided helped alleviate fears and anxiety related to cancer and its recurrence. The participants became more interested in the importance of physical exercise, nutrition, art and culture for health promotion and wanted more support in these matters.

Peer support, in particular, but also psychosocial and informational support enabled cancer rehabilitees and their significant others to move on to a new phase of life in which health is emphasised also as a resource.

**Abstracts**

**Poster number: 132**

**Living alone, Obesity and Smoking: Important factors for Quality of Life after Radiotherapy and Androgen Deprivation Therapy for Prostate Cancer**

• Karin B. Dieperink, Department of Oncology, Odense University Hospital, Denmark
• Steinbørn Hansen, Department of Oncology, Odense University Hospital, Denmark
• Lis Wagner, Research Unit of Nursing, Clinical Institute, University of Southern Denmark, Denmark
• Christoffer Johansen, Unit of Survivorship, Danish Cancer Society Research Center, Denmark
• Klaus K. Andersen, Unit of Survivorship, Danish Cancer Society Research Center, Denmark

**Purpose:** While effective treatment of prostate cancer with radiotherapy and hormones increase survival, adverse effects may reduce quality of life (QoL). The aim of this study was to investigate frequency and severity of self-assessed late adverse effects, and identify the patients most exposed.

**Methods:** Quality of life (QoL) of 317 cancer survivors with primary stage T1-T3 prostate cancer treated with conformal radiotherapy (70-78 Gy) and androgen deprivation therapy was analyzed by using SF-12 and EPIC-26 questionnaires. Patients were stratified into three groups, filling out the questionnaires 1–2, 2–3, and 3–4 years after radiotherapy. Differences between groups were tested with ANOVA and the chi2 test. The influence of marital status, severe obesity, smoking, stage of disease, and applied dose of radiotherapy on QoL was evaluated with multiple linear and logistic regression analyses.

**Results:** Of 337 patients, 317 (94%) answered the questionnaire. The sexual and hormonal summary scores in the EPIC significantly improved during time since radiotherapy (p < .001). Current smoking had a negative effect on SF-12 Physical Component Summary (PCS) and the Mental Component Summary (MCS) scores, on EPIC bowel overall bother (OR 7.8; p = .003), on EPIC mean urinary incontinence scores, and on the sexual domain. Severe obesity had a negative influence on SF-12 PCS and vitality. Severe obesity also was a negative predictor for moderate-to-severe problems in the EPIC urinary incontinence, and in the hormonal domain. Living alone was associated with lower SF-12 PCS, MCS scores, and SF12 general health, social functioning, and the EPIC hormonal domain. The stage of disease or the radiation dose had no statistically significant impact on QoL.

**Conclusion:** Results showed significant negative associations between smoking, severe obesity, and living alone on self-assessed late adverse effects after radiotherapy for prostate cancer. This information may guide rehabilitation.

**Poster number: 133**

**Embracing life after Prostate Cancer: A male perspective of treatment and rehabilitation.**

• Karin B Dieperink, Department of Oncology, Odense University Hospital, Denmark
• Lis Wagner, Research Unit of Nursing, Clinical Institute, University of Southern Denmark, Denmark
• Steinbørn Hansen, Department of Oncology, Odense University Hospital, Denmark
• Olffred Hansen, Department of Oncology, Odense University Hospital, Denmark

**Purpose:** Rehabilitation after cancer treatment has been in focus in recent years. The majority of the published studies have evaluated the results of rehabilitation efforts in breast cancer patients with quantitative endpoints. The aim of this qualitative study is to examine the experiences of disease and rehabilitation in men treated for prostate cancer with radiotherapy and androgen deprivation therapy. The study explores the male perspective of cancer rehabilitation, and the men’s approach to spousal involvement.

**Methods:** Two focus group interviews were conducted with male patients aged 66–77 years. All had completed a rehabilitation programme with individual nursing consultations and physiotherapist guidance. One focus group included men (n=6) who actively involved their spouses in the rehabilitation, and the other focus group included men (n=7) who came alone to the rehabilitation. Meaning condensation and interaction analysis was used as analysis.

**Findings:** To be treated with radiotherapy is like having a fulltime work during treatment, but the worst adverse effects are due to the androgen deprivation therapy influencing masculinity and identity. The men are grateful, and embrace life with a particular sense of humour. Whether the rehabilitation programme is experienced as supportive is dependent on the impact of several things: the professional’s approach, the patient motivation and effort to contribute to health promotion, and how these experi-
ences are converted to coping strategies. The supportive role of the spouse was emphasized, but some men preferred to handle the process alone.

Conclusion: Attention must be drawn to the information presented about adverse effects of androgen deprivation therapy since it severely influences everyday life. Rehabilitation is a mutual challenge of patient and professionals. Spousal involvement may reflect the relationship the couple had beforehand, and therefore it is important to let the man decide whether or not he wants to involve his spouse.

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**Benefits of rehabilitation for cancer patients and significant others**

- Minna Salakari, Turku University of applied science, Finland
- Raija Nurminen, University of applied science, Finland
- Teija Kemppainen, Southwestern Finland Cancer Society, Finland
- Tuja Leinonen, Turku University of applied science, Finland

Purpose: The purpose of the study was to produce knowledge about how rehabilitation benefits cancer patients and their significant others. The knowledge is employed in assessing the effectiveness of rehabilitation and in developing rehabilitation activities.

Methods: The study involved both quantitative and qualitative methods. The qualitative data were collected with theme interviews, N = 120. The data were analysed using inductive content analysis methods. The quantitative research data were collected using the instruments FACT-G (N = 380), GAS (N = 146), RAND-36 (N = 186) and RBDI (N = 190). The data was carried out with PASW 18 Statistics software.

Results: All rehabilitees and their significant others benefitted from rehabilitation courses. The most important benefits were peer and psychosocial support and receiving information. Rehabilitation constituted an important intervention during the disease. Rehabilitation improved the patients’ quality of life, functional capacity, coping and adaptation. Rehabilitation had a positive effect on all areas of well-being. Rehabilitation contributed to their coping resources and increased the number of coping strategies for living with the disease. Peer support included empowering elements, such as open interaction, sense of community and support. Peer support empowered the rehabilitees and their significant others and helped them understand their own situation. The importance of information was emphasised in the process of coping with and adapting to the disease. Information gave them more hope. The care pathway had a significant role in terms of accepting and understanding the disease.

Conclusion: Rehabilitation supports the coping process and the basics of health promotion and helps participants to adapt. Rehabilitation provides more coping strategies. Information was experienced as a source of hope, which has a significant impact on the entire coping process. The rehabilitation process requires a multidimensional programme that ensures strategies and tools for coping and improving participants’ quality of life.
Drama as a rehabilitation method in an adaptation training course for 18 to 25 year-old cancer patients.

• Päivi Mikkola, Turku University of Applied Science, Finland
• Marjo Salmena, Turku University of Applied Science, Finland
• Raija Nurminen, Turku University of Applied Science, Finland
• Teija Kemppainen, Southwestern Finland Cancer Society, Finland
• Kari Ojala, Southwestern Finland Cancer Society, Finland

Purpose: The aim of the development project was to develop and implement an adaptation training course employing drama methods. The target group of the course was 18- to 25-year-old cancer rehabilitees. Another aim was to describe the importance of drama to cancer patients undergoing rehabilitation.

Methods: The adaptation training course was designed and implemented by a team of experts comprising a cancer rehabilitation nurse, a psychiatric nurse, an occupational therapist, a psychologist and a physical therapist. The importance of drama to the rehabilitees was described through participant observation. The data were collected using an observation diary and a questionnaire survey (N = 7). The diary and questionnaires were analysed using content analysis. Drama was employed in the following adaptation training themes: various opening exercises for introducing the participants, the crisis of falling ill with the disease, looking to the future and social activation.

Results: The young rehabilitees participated open-mindedly in the opening and preparatory drama exercises. They all used symbolic objects and fabrics in different colours when introducing themselves. Using a sociogram made it easy for the participants to talk about themselves. During the introductory round, the rehabilitees spoke rather openly about their diseases and wanted to know what resources others had. Participation in role play exercises, in which rehabilitees could try new or different ways of acting, required more encouragement. The rehabilitees concentrated well in all exercises, and the atmosphere was calm and peaceful. The young rehabilitees thought that drama exercises were fun and useful, although at times intimidating.

Conclusion: The young rehabilitees were open-minded about drama methods. The exercises helped them develop their expression skills. The exercises made it easy for the rehabilitees to speak about themselves. The sense of ‘doing together’ was important to the participants.

Cancer and sexuality perceived by cancer patients and their significant others.

• Tuja Leinonen, Turku University of Applied Sciences, Finland
• Kari Ojala, Southwestern Finland Cancer Society, Finland
• Teija Kemppainen, Southwestern Finland Cancer Society, Finland

Purpose: The purpose of five Bachelor’s Theses was to describe how cancer survivors and their significant others experienced their sexuality has changed because of cancer. The aim was to develop cancer rehabilitation.

Methods: Two of the Theses were literature reviews and three empirical studies employing a self-developed semi-structured
questionnaire. The studies were carried out in 2011. The participants included 110 cancer rehabilitees and 68 significant others. Response rates ranged between 70% and 91%. Female (n=79) participants suffered from breast cancer and male (n=31) participants from prostate cancer. The data were analysed using content analysis.

Results: The majority of the women with breast cancer and men with prostate cancer experienced that their sexuality has changed in a negative way. Breast cancer and its treatment had an influence on the rehabilitees’ sex life, relationships, emotional life, appearance, womanhood and physical well-being. However, a third of the participants experienced that breast cancer had not influenced their womanhood. With some of the men, the treatment for prostate cancer caused erection problems, which could normalise with time. Some of the men were afraid of the future and changes in their bodies. Other feelings expressed included depression, a feeling of being insignificant and a feeling that something was missing. Of the significant others, 40% experienced that cancer had influenced the survivors’ self-image and sexuality. Moreover, 27% of the significant others said that their sexuality had decreased or sexual activity had ceased completely because of the treatment. Almost all respondents felt that information and support relating to sexuality were often inadequate.

Conclusion: In terms of sexuality, cancer survivors and their significant others need more information, counselling and support from professionals. A model should be developed for sexual counselling in rehabilitation activities.

Outpatient management of acute leukemia patients. The experience of patients and their relatives in a rehabilitation perspective

- Lene Østergaard Jepsen, Department of Medical Science, Vejle Hospital, Denmark, Denmark
- Mette Terp Høibye, National Institute of Public Health, University of Southern Denmark, Denmark
- Dorthe Gilså Hansen, National Research Center of Cancer Rehabilitation, Research Unit of General Practice, University of Southern Denmark, Denmark
- Lone Smidstrup Friis, Department of Hematology, Odense University Hospital, Denmark

Purpose: Outpatient treatment of patients with acute leukemia (AL) in the Home Unit (HU) at the Department of Haematology, Odense University Hospital, may improve the patients’ health-related quality of life (physical, psychological, and social). The knowledge about how outpatient treatment of acute leukemia patients is experienced by patients and relatives is, however, sparse. This qualitative study addresses the following questions:

- How is treatment in the HU experienced by AL-patients at different times during treatment?
- How is everyday life of the family affected by the special requirements of HU?
- How do AL-patients experience keeping up their social relationships during treatment in HU?

Methods: The study combines qualitative methods of participant observation in HU, individual interviews with 20 patients in the HU and in the patients’ home, and focus group interviews with the relatives.

Results: The pilot-phase is currently ongoing.

Conclusion: Study results will be analyzed in a rehabilitation perspective to elucidate if HU can be actively developed to improve rehabilitation of this fragile group of patients. The study is highly relevant as very little is known about the needs for rehabilitation of AL-patients and how rehabilitation initiatives may be implemented in everyday practice. The movement from inpatient to outpatient treatment is a general trend in the Danish Health Care System. This study may teach us about some of the consequences of that seen from the very important perspective of patients and their relatives.

Improved health insurance process an important part of cancer rehabilitation. Cooperation between Swedish Social Insurance Agency and Department of Oncology in Skåne.

- Maria Helbom, Department of oncology, Skåne University Hospital, Sweden
- Carina Modeus, Department of psychiatry, Skåne University Hospital, Sweden
- Kerstin Andesson, Swedish Social Insurance Agency, Region South, Sweden
- Irene Jakobsson, Skåne University Hospital, Sweden
- Håkan Rundberg, Region Skåne, Sweden

Purpose: Following a reform in health insurance regulations in Sweden, doctors have the mission to formulate a medical certificate assessing diagnosis, work capacity in the terms of reduced function and activity limitations in the report to the Swedish Social Insurance Agency (SSIA) in order for patients to benefit from health insurance. Assessing cancer patients differing and fluctuating health issues have proven to be complicated, resulting in frequent incomplete reports to SSIA leading to increased distress for the patients. To optimise cancer patients’ work-related rehabilitation process, improve health insurance routines, and increase the frequency of correct reports, a cooperation project was initiated between SSIA and Department of Oncology in Skåne.

Methods: Workshops were held for officers at local SSIA offices in order to increase their knowledge of cancer and cancer treatments. Similarly, workshops were held for oncologists to increase knowledge about the new report routines and their consequences for cancer patients’ work-related rehabilitation. A decision support was developed for oncologists, and an officer
Rehabilitation needs of endometrial and cervical cancer patients: A qualitative approach

Poster number: 141

Rehabilitation needs of endometrial and cervical cancer patients: A qualitative approach

Purpose: To identify the short-term rehabilitation needs of women diagnosed with cervical or endometrial cancer. Specifically to elucidate how coping, self-esteem, and personal relations affect the women's needs of rehabilitation.

Design: Qualitative study consisting of two focus group interviews.

Sample: Participants were invited amongst women taking part in a quantitative study completed by the authors. These were women newly diagnosed with cervical or endometrial cancer at Odense University Hospital between September 2011 and January 2012.

Excluded women: were not sufficiently literate in Danish, had mental impairment, had recurrent gynaecologic cancer or had a non-confirmed diagnosis before start of treatment.

The focus groups were designed to include representation of all available treatment modalities, stages of disease and Danish counties referring patients to Odense University Hospital. Women were divided into the two groups based on age (>75 < 55 years), as age was considered highly determinant of the women's rehabilitation needs.

Results: Preliminary data suggests a dramatic increase in accurate health insurance reports, thereby considerably shortening delay in health-insurance payment to cancer patients. The project has raised much attention on a national level, and a national “think-tank” conference on improving routines for health insurance for cancer patients will be held in Skåne in May 2012.

Conclusion: In keeping with increasing prevalence of cancer diagnoses and improved survival rates, cooperation between caregivers, SSIA, and employers in order to facilitate work-related rehabilitation for cancer patients is of paramount importance. This project shows a promising way for constructive cooperation to achieve this.

Cancer rehabilitation and cancer rehabilitation centres in the future

Poster number: 142

Cancer rehabilitation and cancer rehabilitation centres in the future

Purpose: The purpose of this study is to examine what forms and contents of support are currently being provided to cancer patients and their significant others and what alternative forms of support and services should be offered in the future in order to ensure patients the best possible quality of life during the entire cancer treatment process. In addition, the objective is to describe the operating model of future cancer rehabilitation.

Methods: The methods used in this study are document analyses and working with a panel of experts. The first phase of the study comprises a systematic literature review of cancer rehabilitation studies and an analysis of national and international cancer treatment strategies and forms of support and services employed in cancer rehabilitation. The second phase comprises a questionnaire sent to cancer rehabilitation experts (N = 8). The questionnaire is based on the results of the first phase. The third phase of the study comprises a panel of experts on cancer rehabilitation (N = 8).

Results: A report on the study is due to be finished in March 2013. The report will describe cancer rehabilitation in the future, focusing especially on the different forms of support and services employed at the various stages of cancer rehabilitation and on the operating model of a future cancer rehabilitation centre.
Who is More Anxious – Spouses or Patients Surviving Long-Term Cancer? - A Meta-Analysis of Comparative Studies

• Alex J Mitchell, University of Leicester, United Kingdom
• Paul Symonds, University of Leicester, United Kingdom
• John Gill, University of Leicester Medical School, United Kingdom

Objectives: There is still considerable uncertainty about the prevalence of anxiety in spousal relatives of long-term cancer survivors. Caregivers may be worried about return of the cancer but as survival has improved for patients, the psychological outlook of both patients and spouses may be better than expected. A recent meta-analysis found modest rates of anxiety early after a cancer diagnosis (Lancet Oncology 2011; 12(2): 160 – 174). A key question therefore is whether the prevalence of anxiety is increased in relatives of long-term cancer survivors compared with patients themselves?

Method: We conducted a systematic search, critical appraisal and meta-analysis of valid data. In order to clarify whether anxiety is more common in those with cancer we only collected comparative studies that measured anxiety in spousal caregivers and patients. However we faced several methodological issues. Anxiety can be defined by self-report but the gold standard is a clinical or semi-structured interview. Only self-report papers were found. Further a definition of “long-term survivor” is not universally agreed. For the purposes of this study we defined long-term cancer survivor (LTCS) as someone living at least 2 years after their diagnosis.

Results: We identified 9 candidate studies but only 3 contained comparative data that could be entered into the analysis (sample size of 659, comprising 386 patients and 273 relatives).

Using self-report methods the prevalence of anxiety in LTCS was 26.8% in LTCS. It was 32.0% in spousal caregivers. Using relative risk meta-analysis the risk of anxiety was 1.3 in spouses of patients compared with patients themselves (95% CI = 1.03 to 1.75; Chi² = 4.9; P = 0.02).

Conclusions: Anxiety appears to be more common in relatives of LTCS than in patients themselves. However the sample size is limited in this analysis. Individual patient data is necessary to see if anxiety in relatives parallels anxiety in LTCS. Patients and clinicians should be aware that anxiety is common by self-report in both patients and their relatives. Relatives, as well as patients, should have access to support services.

Who is More Depressed – Spouses or Patients Surviving Long-Term Cancer? - A Meta-Analysis of Comparative Studies

• Alex J Mitchell, University of Leicester, United Kingdom
• David Ferguson, University of Leicester Medical School, United Kingdom
• John Gill, University of Leicester Medical School, United Kingdom
• Paul Symonds, University of Leicester, United Kingdom

Objectives: There is still considerable uncertainty about the prevalence of depression in spousal relatives of long-term cancer survivors. One significant factor is extent of depression in patients themselves, another is the duration since diagnosis. A recent meta-analysis found high rates early after a cancer diagnosis (Lancet Oncology 2011; 12(2): 160 – 174). In the short term considerable distress is common but with improvements in treatment, survival has improved, and the psychological outlook for long-term survivors may be better than expected. A key question therefore is whether the prevalence of depression is increased in relatives of long-term cancer survivors compared with patients themselves?

Method: We conducted a systematic search, critical appraisal and meta-analysis of valid data. In order to clarify whether depression is more common in those with cancer we only collected comparative studies that measured depression in spousal caregivers and patients. However we faced several methodological issues. Depression can be defined by self-report but the gold standard is a clinical or semi-structured interview. Further a definition of “long-term survivor” is not universally agreed. For the purposes of this study we defined long-term cancer survivor (LTCS) as someone living at least 2 years after their diagnosis.

Results: We identified 19 candidate studies but only 9 contained comparative data that could be entered into the analysis (sample size of 2031, comprising 1072 patients and 959 relatives).

Using self-report methods the prevalence of depression in LTCS was 23.9% in LTCS. It was 23.6% in spousal caregivers. Using relative risk meta-analysis the risk of depression was 0.98 in patients compared with relatives (95% CI = 0.838 to 1.146; Chi² = 0.06; P = 0.804).

Conclusions: Depression is no more common (and no less common) in relatives of LTCS than patients themselves. Factors that predict depression in relatives of LTCS deserve further study. Individual patient data is necessary to see if depressed in relatives parallels depression in LTCS. Patients and clinicians should be aware that depression is moderately common by self-report in both patients and their relatives.
U-CARE–psychosocial care via internet for adults with cancer

• Susanne Mattsson, Department of Public Health and Caring Sciences, Sweden
• Erik Olsson, Department of Public Health and Caring Sciences, Sweden
• Sven Alfonsson, Department of Public Health and Caring Sciences, Sweden
• Birgitta Johansson, Department of Radiology, Oncology and Radiation Science, Sweden

Background: U-CARE is a governmental strategic research program at Uppsala University focusing on cardiovascular patients and adult and child cancer patients. This presentation concerns adults with cancer. The overarching goal with the intervention is to promote psychosocial health among patients suffering from cancer and their significant others by means of self-help programs delivered via an internet platform. Another goal is to reduce individual and societal costs by increasing patient well-being. Professionals within healthcare, clinical psychology, health economics and information systems collaborate to achieve these goals.

Purpose: To evaluate the effects of internet based Stepped Care on anxiety- and depression symptoms in patients with cancer and to evaluate the cost effectiveness of the intervention.

Methods: Patients with Prostate-, GI- and Breast Cancer will be screened for anxiety and depression with Hospital Anxiety and Depression Scale and if showing relevant levels of anxiety and/or depression will be randomized to either Stepped Care or Standard Care. The U-CARE platform can provide a base for interactive support and cognitive behavioral therapy (CBT). This will be administered stepwise to patients showing clinically relevant levels of psychological distress. Step 1 consists, among other things, of self-help material, a chat forum and a FAQ-section where patients can ask questions to an expert. Participants who show remaining clinically relevant distress after access to step 1 will be offered step 2 which consists of internet based CBT, administered by a personal therapist. Through a multi-disciplinary approach, the U-CARE program aims at developing new evidence-based knowledge in basic and applied psychosocial healthcare and reduced costs for individuals and society. The study design, the internet based Stepped Care intervention and the evaluation of the project will be presented.

Comorbidity in Radiotherapy-treated Head and Neck Cancer: Impact of Individual Comorbidities on Survival.

• Charlotte Rotbøl Bøje, Dept. of Experimental Clinical Oncology, Aarhus University Hospital, Denmark
• Jens Overgaard, Dept. of Experimental Clinical Oncology, Aarhus University Hospital, Denmark

Background: Comorbidity is common in HNSCC-patients due to high age and aetiology of the disease. A number of indices have been developed to classify comorbidity, e.g. Charlson Comorbidity Index (CCI). The purpose of this study was to 1) describe comorbidity in 12,623 Danish HNSCC patients 2) determine the prognostic impact of individual comorbid conditions from the CCI and 3) study the value of CCI as a tool in HNSCC. Materials and methods: 12,623 HNSCC-patients treated with RT in 1992-2008 from the DAHANCA-database were included. Data on comorbidity prior to HNSCC-diagnoses was obtained from the National Patient Registry and adapted to the CCI. To determine the prognostic impact of individual comorbidities a series of cross-tabulations and $\chi^2$-analyses were done. The conditions affecting survival were analysed in a multivariate model to determine which condition and to what extent survival was affected.

Results: Median age was 62 years, 73% were males. 44% had comorbidity at time of diagnosis. The prevalence of individual comorbidities were: cardiovascular diseases (CVD, 7%), chronic pulmonary diseases (CPD, 7%), liver-disease (7%), diabetes (7%), ulcer-disease (6%), periphery vascular disease (PVD, 5%), other controlled cancers (CC, 5%), AMI (4%), with different patterns according to site. Dementia, kidney-disease, hemiplegia, leukaemia, lymphomas, congestive heart failure (CHF) and AIDS had a prevalence of less than 1%. CVD, CPD, liver-disease, PVD, diabetes, ulcer-disease, and CC were significantly associated with 5-year overall survival. In a Cox proportionate multivariate analysis adjusted for site, age, sex, and stage, CVD (HR=1.38 [1.25-1.52]), CPD (HR=1.41 [1.27-1.56]), liver-disease (HR=1.64 [1.47-1.83]), PVD (HR=1.23 [1.10-1.37]), ulcer-disease (HR=1.42 [1.29-1.57]), CHF (HR=1.53 [1.27-1.85], and CC (HR=1.15 [1.09-1.22]) were independently significantly associated with risk of death.

Conclusions: Comorbidity is common and affects survival in HNSCC-patients. Comorbidity needs to be assessed when staging HNSCC-patients but the value of CCI for this purpose is questionable.
Long-term survival after high dose chemotherapy with autologous stem cell support (HDT) for lymphomas in adults – a national multi-center study

Methods: The study is part of a national multi-center study exploring several late effects after HDT for lymphomas including all lymphoma-patients aged ≥ 18 years at time of HDT and treated 1987-2008 at five Norwegian university hospitals. Data were obtained from The Cancer Registry of Norway, and linked with clinical data from each hospital. The patients were grouped based on histopathological diagnosis: Hodgkin’s lymphoma (HL), very aggressive/aggressive lymphomas (large B-cell, mantle cell, Burkitt’s, lymphoblastic and T-cell lymphoma) and indolent lymphomas (follicular lymphoma and other). Observation time was estimated from date of HDT to death or cut-off at December 31, 2011. Crude cumulative probabilities for survival were calculated by the Kaplan-Meier method and the groups compared with log-rank tests.

Results: 711 lymphoma-patients have received HDT in Norway 1987-2008 (HL: n=147, very aggressive/aggressive: n=467, indolent: n=84 and unknown/unclassifiable: n=13). Median age at HDT was 48 years (18-69), and 65% were men. Total body irradiation and high dose cyclophosphamide (TBI) was used as conditioning regimen in 102 patients (14%), whereas 609 (86%) received chemotherapy only (BEAM). A total of 412 (58%) patients were alive per 31.12.2011. 10-year overall survival (OS) for the whole group was 55% (95%CI 51%-59%). For the HL, aggressive and indolent lymphomas 10-year OS was 65% (95%CI 57-73), 57% (95%CI 45%-69%) and 52% (95%CI 47%-57%) respectively (p=0.017). There was no statistical significant difference in survival between the two conditioning regimens (p=0.77).

Conclusion: Almost 60% of lymphoma patients are alive 10 years after HDT. These cancer survivors are heavily treated, and are likely to carry a large burden of late effects. These will be further examined in an extensive multi-center study of all Norwegian HDT lymphoma survivors, including medical, psychosocial and cognitive late effects.

Comorbidity is a prognostic factor in uterine cancer – a nationwide cohort study based on clinical data

Purpose: To investigate long-term survival after HDT, and compare survival between the different lymphomas and conditioning regimens.

Methods: The present study is conducted on data from 4,244 UC patients registered in Danish Gynecologic Cancer Database (DGCD) within the time period 1st of January 2005 till 1st of October 2011. DGCD is a nationwide clinical database containing detailed information on a large number of tumor characteristics including comorbidity. Comorbidity registered in DGCD is in the present study adapted to a modified version of the renowned Charlson Comorbidity Index which allows assignment of all DGCD patients a weighted comorbidity score (CS). Patients have been divided into groups with none (CS=0), mild (CS=1), moderate (CS=2) and severe (CS ≥3) comorbidity.

Results: Univariate survival analysis shows a highly significant (p<0.001) negative correlation between increasing level of comorbidity and survival. Multivariate analysis states that comorbidity is a significant independent prognostic factor associated with hazard ratios of 1.32 (p=0.014, 95% confidence interval (CI) 1.06-1.65), 1.67 (p<0.001, 95% CI 1.25-2.22) and 1.76 (p=0.006, 95% CI 1.18-2.63) in mild, moderate and severe comorbidity respectively.

FIGO stage, residual tumor; tumor grade, age, BMI and performance score are other variables found to influence OS independently in UC.

Conclusion: Comorbidity is found to be an independent prognostic factor in UC and a significant negative correlation is found between the degree of comorbidity and survival.

Vaginal changes in cervical cancer survivors affecting sexual health – implications for interventions?

• Alexandra Hofsjö, Department of Oncology-Pathology Sweden
• Nina Bohm-Starke, Department of Clinical Siences, Karolinska Institutet, Sweden
• Bo Blomgren, AstraZeneca, Safety assessment, Södertälje, Sweden
Methods: We included 10 patients treated for cervical cancer and 10 healthy controls. The patients were treated with surgery alone, radiotherapy alone or with combined treatment. Vaginal biopsies were obtained and analysed using immunohistochemistry followed by computerized image analysis of estrogen receptors α and β, progesterone receptors A and B, androgen receptors and proliferation marker Ki67. The morphology was estimated by measuring four parameters in the epithelium.

Results: There was a significantly lower expression of estrogen receptor α (ER α) in the epithelium (p=0.001) in the group of women who had been treated for cervical cancer compared to the controls. There were no significant differences in the other analyses which were performed in this limited and heterogeneous material.

Conclusion: Women who have been treated for cervical cancer have changes in their vaginal epithelium with a decreased expression of estrogen receptor α. The changes in the vaginal epithelium with signs of atrophy may affect their sexual health. We hypothesize that early interventions with topical estrogen may stimulate the epithelium in spite of the decreased receptor expression and improve the situation for the cervical cancer survivors. The correlation to sexual health, the clinical implications and replication of the findings in a larger population are now studied in our main study focusing on the radiotherapy effects.

The use of publicly subsidized psychological treatment among Danish cancer patients

• Annika von Heymann-Horan, Danish Cancer Society Research Center, Denmark
• Pernille Envold Bidstrup, Danish Cancer Society Research Center, Denmark
• Luise Cederkvist Kristiansen, Danish Cancer Society Research Center, Denmark
• Christoffer Johansen, Danish Cancer Society Research Center, Denmark
• Susanne Oksbjerg Dalton, Danish Cancer Society Research Center, Denmark

Purpose: Approximately 30% of cancer patients suffer from psychological distress as a consequence of cancer and psychological treatment can be an effective way of alleviating this distress and enhancing patients’ quality of life. This study investigates Danish cancer patients’ use of publicly subsidized treatment by psychologists. The aims are to identify patient characteristics related to use and extent of use, and to compare cancer patients’ utilization of psychologist services to that of the general public.

Methods: The study population consists of 57,053 participants in the Diet, Cancer, and Health cohort, of whom have received a diagnosis of cancer since inclusion in 1993-1997. Data on cancer diagnosis and utilization of psychologists are obtained from national Danish registers for the study period from 1993-97 to 2011. Further measures include demographic factors, social support, health status, and comorbidity obtained through questionnaires or registers, respectively. Cox proportional hazards are used to identify factors related to utilization.
Rehabilitation need in pelvic cancer survivors

- Gail Dunberger, Division of Clinical Cancer Epidemiology, Dept of Oncology, Institute of Clinical Sciences, Sahlgrenska Academy, Sweden
- Gunnar Steineck, Division of Clinical Cancer Epidemiology, Dept of Oncology, Institute of Clinical Sciences, Sahlgrenska Academy, Sweden
- Karin Bergmark, Division of Clinical Cancer Epidemiology, Dept of Oncology, Institute of Clinical Sciences, Sahlgrenska Academy, Sweden

Purpose: Pelvic radiotherapy induces numerous symptoms affecting all pelvic organs. If symptoms are not acknowledged, untreated side-effects may lead to suffering, social isolation, lowered quality-of-life and decreased sexual health.

Methods: The Cancer Rehabilitation Unit at Sahlgrenska University Hospital in Gothenburg, Sweden is a new rehabilitation initiative focusing on symptom management and sexual health after pelvic radiotherapy. The rehabilitation clinic is managed by nurse practitioners and supervised by a senior consultant. In an initial phase the clinic sees cancer survivors with pelvic cancer; i.e., gynecological, rectal or anal cancer. A questionnaire is answered by the patient at baseline for inventory of physical and sexual symptoms. A “priority list”, with symptoms of concern forms the base for treatment and interventions. Most cancer survivors require 1-3 visits to the rehabilitation clinic for treatment, support and management. Interventions are evaluated at 3 month after treatment.

Result: In 221 consecutive cancer survivors 78% reported a change in bowel habits. Forty-three percent reported weekly diarrhea and 22% monthly fecal incontinence, affecting quality-of-life moderate/much in 23%. A change in voiding habits was reported by 52%. Other common symptoms are vaginal changes (vaginal stenosis 30%) and symptoms from the lymph system (45%). Besides information and treatment for physical symptoms, women with vaginal stenosis are offered a dilator with careful information and follow-up. Sexual counseling is offered survivors with problems as dyspareunia and lack of sexual desire. A preventive dilator program after pelvic radiotherapy is being developed.

Conclusion: Female cancer survivors experience different physical symptoms after pelvic cancer that decrease bodily function and have a negative influence on social functioning, sexual health and consequently quality-of-life. In order to rehabilitate pelvic cancer survivors, we need to address physical symptoms and sexual health. Early rehabilitation, including prevention, information, support and treatment, can help cancer survivors of pelvic cancer to regain physical, psychological and sexual health.

Late effects clinic - Do the late patients perceive a need?

- Inger Norre Christensen, Aarhus Universitets Hospital, Denmark
- Niels Clausen, Aarhus Universitets Hospital, Denmark

Background/Purpose: Treatment for Childhood Cancer may cause complications of physical, psychological or pedagogic character as well as hampering development of social competences. Often these symptoms first appear later in life. In 2008 Aarhus University Hospital established a late effect clinic. In relation to this it was investigated if survivors of childhood cancer had a need for continuous outpatient follow up regarding knowledge of own diagnose, treatment and late effects.

Method: 102 persons having suffered from various childhood cancers were included. Two weeks before and shortly after their out-patient visit, a similar questionnaire was given to the participants. Questions concentrated on their needs for information, knowledge and future perspectives in relation to their diagnose, as well as the importance of follow-up.

Results: 45 girls and 55 boys were included. Two declined to participate. 40 participants expressed need of more information concerning their diagnose, in spite of the fact that this information was given to all participants. Fifty percent were aware of having received chemotherapy and almost all knew if they had an operation or received radiation therapy in relation to their treatment. 18 participants felt their previous cancer still had an impact on their quality of life. More than half felt obliged to show special concerns regarding future perspectives in relation to their diagnose, treatment and late effects.

Conclusion: The Late effect clinic:
- has a diagnosing, guiding and referring function
- ensures that patients are informed in relation to their diagnose, treatment and risk of late effects
**Abstracts**

- exchanges experiences of late effects between the patients
- is appreciated by its patients as general practitioners lack sufficient knowledge in relation to their problems
- attend previous patients with late effects who continuously ask for advice
- has a future perspective for the development of nursing consultations

**Return to Primary Service Among Bone Marrow Transplant Rehabilitation Inpatients: An Index for Predicting Outcomes**

- Jack Fu, University of Texas M.D. Anderson Cancer Center, USA
- Jay Lee, University of Houston, USA
- Dennis Smith, University of Houston, USA
- Ying Guo, University of Texas M.D. Anderson Cancer Center, USA

**Objective:** To assess rehabilitation inpatient risk of return to primary service in bone marrow transplant patients.

**Design:** Retrospective review.

**Setting:** Inpatient rehabilitation unit within a tertiary referral based cancer center.

**Participants:** 131 bone marrow transplant patients who were admitted a total of 147 times to inpatient rehabilitation between January 1, 2002, and April 30, 2010.

**Interventions:** None.

**Main Outcome Measures:** We analyzed return to primary service and demographic information, cancer characteristics, medications, hospital admission characteristics, and laboratory values.

**Results:** 41% (61/147) of bone marrow transplant admissions were transferred from the inpatient rehabilitation unit back to the primary service. Of those transferred back, 38% (23/61) died after being transferred back to the primary service. Significant or near significant relationships were found for a platelet count < 43,000 per microliter (p<.01), a creatinine level > 0.9 milligrams/deciliter (p<.05), the presence of an antibacterial agent (p=.0519), the presence of an antifungal agent (p<.05) and leukemia, lymphoma or multiple myeloma diagnosis (p<.05). Using four of these factors the Return to Primary-Bone Marrow Transplant (RTP-BMT) index was formulated to determine the likelihood of return to the primary team.

**Conclusion:** Bone marrow transplant patients have a high rate of transfer from the inpatient rehabilitation unit back to the primary service. The RTP-BMT score can be a useful tool to help clinicians predict the likelihood of return to primary acute care service.

**Key Words:** Bone marrow transplant; Rehabilitation; Cancer.

**Use of Injectable Spasticity Management Agents in a Cancer Center**

- Jack Fu, University of Texas M.D. Anderson Cancer Center, United States of America
- Carolina Gutierrez, University of Texas M.D. Anderson Cancer Center, United States of America
- Eduardo Bruera, University of Texas M.D. Anderson Cancer Center, United States of America
- Ying Guo, University of Texas M.D. Anderson Cancer Center, United States of America
- Shana Palla, University of Texas M.D. Anderson Cancer Center, United States of America

**Objective:** To analyze the utilization and effectiveness of injectable spasticity medications by the physiatry team at a tertiary referral based cancer center.

**Design:** Retrospective study.

**Participants:** Patient and injection characteristics were obtained from patients who had received onabotulinum toxin or phenol nerve block injections from December 1, 2007 through January 31, 2012. Out of 3724 physiatry consultations during this period, 20 (less than 1%) different cancer patients received a total of 54 total procedures.

**Results:** The majority of patients (17/20, 85%) had a positive response to the injection. A positive response to an injection was defined by: 1) if the patient qualified to receive and was given another injection or 2) if there is a record of improvement if they did not receive another injection. 10/20 (50%) patients received only one injection. 7/10, (70%) reported a positive response to the injected agent. Those with only one injection, tended to live farther away and die sooner. 4/54 injected resulted in side effects (2 phenol, 2 botulinum toxin). 9/54 (17%) procedures occurred while the patient was on a chemotherapy protocol. All patients were injected at least 1 year out from initial diagnosis.

**Conclusion:** The use of injectable medications for spasticity management in a cancer population is infrequent but can be effective and safe. Oncologic mortality and ongoing cancer treatment are encountered and can affect the number of injections patients receive. Educating oncology practitioners about these agents is needed.

**Return to Primary Service Among Rehabilitation Inpatients with Leukemia**

- Jack Fu, University of Texas M.D. Anderson Cancer Center, USA
- Jay Lee, University of Houston, USA
- Dennis Smith, University of Houston, USA

**Objective:** To assess rehabilitation unit inpatient risk of return to primary service in leukemia patients.
Design: Descriptive retrospective review of medical records.
Setting: Major national cancer hospital.
Subjects: 225 leukemia patients who were admitted a total of 255 times to inpatient rehabilitation between January 1, 2005, and April 10, 2012.
Intervention: None.
Main Outcome Measures: We analyzed return to primary service and demographic information, cancer characteristics, medications, hospital admission characteristics, laboratory values and functional scores.
Results: 93/255 (36.5%) of leukemia inpatient rehabilitation admissions returned to the primary service. 17/93 (18%) and 42/93 (45%) of these patients died in the hospital and were discharged home respectively. Out of the 26 different factors analyzed, statistically significant factors (p<.05) associated with return to primary include peripheral blast percentage (percentage greater than 3.2%) and the presence of an antifungal agent on the day of inpatient rehabilitation transfer.
Conclusion: Leukemia patients on inpatient rehabilitation are medically complex. Patients with an elevated peripheral blast percentage and/or the presence of an antifungal agent may be at increased risk of return to primary service.

Attachment style and need for rehabilitation of patients with gynaecological cancer

• Kamila Adellund Holt, Odense University Hospital, Denmark
• Dorte Glis Hansen, National Research Center of Cancer Rehabilitation, Denmark
• Ask Elklit, Danish Research Unit of Psychological Trauma, Denmark
• Pernille Tina Jensen, Dept of Gynaecology and Obstetrics, Odense University Hospital, Denmark
• Ole Mogensen, Dept of Gynaecology and Obstetrics, Odense University Hospital, Denmark

Background: The rehabilitation needs of cancer patients changes over time. It is therefore crucial to base the intervention on the patient’s individual needs and goals for rehabilitation. A person’s attachment style has been shown to affect health behaviour. From this perspective it is therefore important to know the association between the patient’s attachment style and rehabilitation measured by self-experienced quality of life.

Purpose: To provide new knowledge about:
Integration of rehabilitation in a highly specialized gynaecological department.
Development and testing of an individually adapted rehabilitation intervention.
Needs for rehabilitation among women with gynaecological cancer.
Association between adult attachment style of women with gynaecological cancer and their quality of life, rehabilitation needs and symptoms of depression and Post Traumatic Stress Disorder.

Design: Prospective, longitudinal study.
Methods: The study is designed as a prospective, longitudinal study. In total 150 women, aged 20-75 years, treated surgically on suspicion of endometrial, cervical or ovarian cancer are to be included. The rehabilitation intervention, that are developed include two nurse consultations and two evaluating phone calls. Data sampling includes patient questionnaires at baseline and five months following operation. Patient reported outcomes are sampled by use of validated questionnaires. Health-related quality of life is measured by use of:
EORTC QLQ-C30 and specific symptoms surveys as EORTC QLQ-EN24, EORTC QLQ-CX24 and EORTC QLQ-OV28; Attachment style and mental symptoms are measured using Revised Adult Attachment Scale, Major Depression Inventory and Harvard Trauma Questionnaire. As part of the rehabilitation intervention, individual needs are explored using, EORTC QLQ-C30 and specific symptoms surveys fulfilled at one, three and five months and discussed with the nurses.

Results: Inclusion of the participants is scheduled to start May 2012 and continue until 150 women are included. Study design and the primary experiences with inclusion will be discussed at the symposium.

Pathology in the nerve transmission and symptoms of associated pain in upper limb in breast cancer patients after radiotherapy.

• Katarzyna Hojaj, Dept of Rehabilitation in the Greater Poland Cancer Centre, Poland
• Magdalena Wojtysiak, Dept of Pathophysiology of Locomotor Organs, Karol Marcinkowsi University of Medical Science in Poznan, Poland
• Juliusz Huber; Dept of Pathophysiology of Locomotor Organs, Karol Marcinkowski University of Medical Science in Poznan, Poland
• Piotr Prilecki, Dept of Radiotherapy, Greater Poland Cancer Centre; Dept of Electroradiology, Karol Marcinkowski University of Medical Sciences in Poznan, Poland

Purpose: The contemporary trends in breast cancer treatment based on the application of new surgical techniques, radiotherapy and chemotherapy considerably improve the recovery percentage. However, this group of patients still complains about pain in upper limb, which consequently causes the physical disability and decrease the life quality. The authors present health status in breast cancer patients with pain in upper limb after radiotherapy.

Methodology: The analysis of the performed physical (muscle strength with Lovett’s scale, pain intensity with VAS, range of movement in the arm, periosteal and deep reflexes, sensory perception examination) and neurophysiological examinations (electroneurographical examinations – ENG, by means of M-
wave and SCV studies) in cases of patients with breast cancer after radiotherapy who complaining about the pain in upper limb.

Results: ENG examinations performed in 29 patients revealed the sensory polyneuropathy in nerve fibers of upper extremities in about 38% of them. There were not found changes in transmission of motor fibers. Except some cases of patients with tunnel carpal syndrome and cervical radiculopathies other neurological deficits were not confirmed.

Conclusions: The choice of the complex rehabilitation methods in patients with breast cancer after radiotherapy depends on the tumor progress, the patient's general health status and the complaints on pathological symptoms reported by the patients, verified by objective testing. The application of neurophysiological examination (ENG studies) greatly supplements the diagnosis of the above mentioned disorder and allows for the choice of rehabilitation treatment and assess its efficiency.

Level of anxiety and depression among cancer survivors attending an inpatient rehabilitation program

- Line Oldervoll, Røros Rehabilitation LHL-Health, Norway
- Jon Arne Sandmæl, Røros Rehabilitation LHL-Health, Norway
- Frode Skanke, Røros Rehabilitation LHL-Health, Norway

Purpose: The primary aim was to explore the level of anxiety and depression among cancer patients at admission to an inpatient rehabilitation program. Secondary aims were to study changes in anxiety and depression from admission to 7 months after completion of the rehabilitation program.

Methods: Cancer patients with different diagnosis and within employable age were eligible for inclusion. A pre-post test design was used in this pilot study. The patients participated in a 3 weeks primary stay and a one week follow-up stay (8-12 weeks after the primary stay). Rehabilitation took place in groups of 10-15 participants and consisted of physical exercise, education on topics concerning “living with cancer” using a cognitive approach. Anxiety and depression was measured by the Hospital Anxiety and Depression Scale (HADS). Assessment took place at arrival of the rehabilitation (T1), at arrival of the follow-up stay (T2) and 7 months after the follow up stay (T3). Descriptive statistics were used to analyse level of anxiety and depression at T1 and repeated measure ANOVA to analyse the change in anxiety and depression between T1, T2 and T3.

Results: 134 of 163 included participants (82%) completed both rehabilitation stays and returned questionnaires at T3. The majority of completers were females (81%), breast cancer survivors, highly educated and with mean age of 52.8 years. We are in process of analysing the data including approximately 200 participants included in the period between august 2008 and june 2011. The results will be presented at the symposium.

Conclusion: Will be presented at the symposium

Poster number: 159

What characterizes the cancer survivors that are referred to an inpatient rehabilitation program?

- Line Oldervoll, Røros Rehabilitation LHL Health, Norway
- Jon Arne Sandmæl, Røros Rehabilitation LHL Health, Norway
- Gro Bertheussen, Dept of Physical Medicine and Rehabilitation, St Olavs Hospital, Norway

Purpose: The primary aim was to explore demographic and medical characteristics of cancer survivors referred to an inpatient rehabilitation program. Secondary aims were to compare the characteristics between the completers and the drop-outs.

Methods: This was an open intervention study involving cancer survivors with different diagnosis and within employable age. Demographic data were collected directly from the patients and medical data from the patient’s medical records. The multidisciplinary program consisted of physical training, patient education and group discussions over a three week primary stay and a one week follow-up stay (8-12 weeks after the primary stay). Fatigue was measured by Fatigue questionnaire.

Results: Hundred and sixty three participants were included in this pilot study. Mean age was 52.5 ± 8.1 years, 77% were females, 56% had breast cancer, 34% had university education ≥ 4 years, mean Karnofsky performance status was 87 ±12, and mean body mass index 25.7 ± 4.2 kg/m2. Median time since cancer diagnosis was 0.9 years and 52% had been diagnosed with cancer within last year; 17% between 1 and 2 years earlier and 31% more than 2 years earlier. 28% of the completers had relapse and/or metastasis. A significantly higher portion of the dropouts were males (p = 0.048), had high school as the highest educational level (p = 0.015), were on disablement- or rehabilitation benefit (p = 0.017) and were smokers (p < 0.003). However, the dropouts reported lower mental fatigue compared to the completers (p = 0.022).

Conclusions: The majority of the participants were women, they had breast cancer and they were relatively highly educated. The study indicated that the drop-outs had a lower socio-economic status than the completers. These findings raise important questions concerning the use of inpatient rehabilitation programmes for cancer patients.

Poster number: 160
Identification of rehabilitation needs of head and neck cancer patients in transition from treatment to follow-up: Pilot study based on ICF

Lise Bjerrum Thisted, Copenhagen University Hospital, Rigshospitalet, Denmark

Purpose: According to the National Cancer Plan, hospitals in Denmark must assess cancer patient needs for rehabilitation. The National Board of Health suggests that ICF endorsed by the WHO, could be an instrument to identify rehabilitation needs. Based on head and neck cancer patients, a master thesis has investigated which needs are perceived by patients in their transition from treatment to follow-up. In a meta-summary it was examined to what extent the ICF coreset for Head and Neck Cancer (ICF HNC) supports the patients experienced rehabilitation needs. Most needs perceived could be contained. Exceptions were experiences concerning intimacy, existential needs, and the desire to meet peer patients. In 2012 a pilot study has been initiated at Copenhagen University Hospital. The aim of the study is to investigate whether rehabilitation conversation based on ICH HNC interview guide, narrative communication techniques are able to identify the patients perceived needs for rehabilitation and initiate the rehabilitation process in transition from treatment to follow-up as part of the cancer treatment.

Methods: The study is an intervention study, where head and neck patients are invited to a rehabilitation consultation based on six open-ended questions about the influence cancer has on daily life. Three specific nurses educated in cancer rehabilitation (three days course) and narrative communication techniques, have the consultations with the patients two weeks after curable treatment is finished. After the consultation the patient answer a questionnaire based on ICF HNC. Three days later the patient is interviewed by telephone by the project coordinator in order to verify and examine to which extent the needs for rehabilitation were identified, and what the patients experience is of the consultation.

Results and conclusions: The study plans to include a total of 30 patients before July 2012, and expects to be able to present results in September 2012.

An evidence-based guideline Cancer rehabilitation for professionals in oncology and rehabilitation medicine in the Netherlands

Miranda J Velthuis, Comprehensive Cancer Centre the Netherlands (IKNL), The Netherlands
Brigitte Gijsen, Comprehensive Cancer Centre the Netherlands (IKNL), The Netherlands
Marjolein van der Pol, Comprehensive Cancer Centre the Netherlands (IKNL), The Netherlands
Harry Hillen, Maastricht University, The Netherlands
Jan-Paul van den Berg, Meander Medical Centre Amersfoort, The Netherlands

Purpose: In October 2011 IKNL (Comprehensive Cancer Centre the Netherlands) published the national evidence-based guideline for multidisciplinary cancer rehabilitation (www.oncoline.nl). Following publication, IKNL will implement the recommendations of the guideline into practice nation wide. Prior to implementation, we analysed the actual cancer rehabilitation care in perspective of the new guideline, and the barriers and facilitators for guideline implementation. This study, funded by ZonMw, provides basic insights for the design of the optimal implementation strategy for the guideline.

Methods: This study consisted of three sub studies (April 2011 and April 2012): 1) an online survey among professionals in oncology and rehabilitation medicine (n=218), 2) an investigational conference with cancer patients (n=13) and 3) in depth interviews with professionals and managers in oncology and rehabilitation medicine, and health insurance companies (n=19).

Results: The survey showed the recommendations to be insufficiently implemented in usual care. Special attention is needed for screening instruments for detection of cancer side effects, an intake for cancer rehabilitation and the rehabilitation programmes in the whole cancer trajectory as recommended in the guideline. The majority of the respondents confirmed the implementation of recommendations is achievable. In all sub studies the factors most frequently mentioned as facilitating implementation are: 1) close cooperation between professionals in oncology and rehabilitation medicine, 2) increase of knowledge about the guideline among professionals and 3) regional arrangements of referral to and supply of cancer rehabilitation programmes. Barriers for guideline implementation are lack of time, finance, knowledge and interdisciplinary cooperation.

Conclusion: Although rarely done, an analysis prior to guideline implementation provides useful insights and recommendations on specific parts of the guideline. Specific recommendations for implementation in daily practice will be applied for designing the nation wide implementation of the guideline cancer rehabilitation. IKNL has started a nation wide project to guide health care organisations in applying the study insights to prioritize and design their activities for guideline implementation.

An analytic study to design the implementation strategy for the evidence-based guideline Cancer rehabilitation in the Netherlands

Saskia MLunter, IKNL, The Netherlands
Maryjolein A van der Pol, IKNL, The Netherlands
Brigitte CM Gijsen, IKNL, The Netherlands
Miranda J Velthuis, IKNL, The Netherlands

Purpose: In November 2010 IKNL (Comprehensive Cancer Centre the Netherlands) published the national evidence-based guideline for multidisciplinary cancer rehabilitation (www.oncoline.nl). Following publication, IKNL will implement the recommendations of the guideline into practice nation wide. Prior to implementation, we analysed the actual cancer rehabilitation care in perspective of the new guideline, and the barriers and facilitators for guideline implementation. This study, funded by ZonMw, provides basic insights for the design of the optimal implementation strategy for the guideline.

Methods: This study consisted of three sub studies (April 2011 and April 2012): 1) an online survey among professionals in oncology and rehabilitation medicine (n=218), 2) an investigational conference with cancer patients (n=13) and 3) in depth interviews with professionals and managers in oncology and rehabilitation medicine, and health insurance companies (n=19).

Results: The survey showed the recommendations to be insufficiently implemented in usual care. Special attention is needed for screening instruments for detection of cancer side effects, an intake for cancer rehabilitation and the rehabilitation programmes in the whole cancer trajectory as recommended in the guideline. The majority of the respondents confirmed the implementation of recommendations is achievable. In all sub studies the factors most frequently mentioned as facilitating implementation are: 1) close cooperation between professionals in oncology and rehabilitation medicine, 2) increase of knowledge about the guideline among professionals and 3) regional arrangements of referral to and supply of cancer rehabilitation programmes. Barriers for guideline implementation are lack of time, finance, knowledge and interdisciplinary cooperation.

Conclusion: Although rarely done, an analysis prior to guideline implementation provides useful insights and recommendations on specific parts of the guideline. Specific recommendations for implementation in daily practice will be applied for designing the nation wide implementation of the guideline cancer rehabilitation. IKNL has started a nation wide project to guide health care organisations in applying the study insights to prioritize and design their activities for guideline implementation.
Outpatient multidisciplinary rehabilitation programs - The patient experience

• Lene Thorsen, National Resource Center for late Effects after Cancer Treatment,
  Oslo University Hospital HF, Norway
• Susanne Alme, Outpatient rehabilitation unit, Dept of clinical service, Radiumhospitalet, Norway
• Maren H Guddal, Outpatient rehabilitation unit, Dept of clinical service, Radiumhospitalet, Norway
• Roy Nystad, Outpatient rehabilitation unit, Dept of clinical service, Radiumhospitalet, Norway

The patient experience

• Lise Bjerrum Thisted, Copenhagen University Hospital, Rigshospitalet, Denmark
• Vibe Bethlowsky Rasmussen, Copenhagen University Hospital, Rigshospitalet, Denmark

Background: About 50% of cancer survivors are of working age. For society it is important to facilitate patients possibility to return to work. Returning to work is important for the quality of life for cancer survivors. One of the outpatient multidisciplinary rehabilitation programs (ORP) for cancer survivors at Oslo University Hospital are funded by the Norwegian Government program “Fast Return to Work (Fast-RTW)”. Cancer patients on sick leave, partly out of work and/or at risk of falling out of work can be included in these Fast-RTW funded health services. The health authorities have demanded systematic measurements of the efficacy of the program.

Method: Cancer survivors were given the option of participating in a nine week multidisciplinary outpatient rehabilitation program with attendance once a week. Each day started with a patient education lesson followed by conversation/discussion sessions. The lessons comprised exercise and physical activity, side effects and long-term effects of treatment, relationship and sexuality, emotional challenges, work and social security, nutrition and diet, coping and cancer survivor experience. This was followed by a two hour session with physical activity. At the end of the program the patients were asked to answer a survey evaluating individual satisfaction, usefulness and relevance of the program, and how it might have had an effect on their QoL and working status. We will present the results of the patient satisfaction with the ORP, the effect on work status, and to what degree the program had an impact on their QoL.

Discussion: Patients were informed about the rehabilitation programs at the end of their medical treatment. Patient satisfaction surveys are used as instruments to evaluate the quality of health services. The fact that patients experienced the program as useful and relevant is assumed to be of importance for the patient’s quality of life, health condition and motivation for returning to work. It must be assumed that the patient’s satisfaction of the program has an impact for the individual commitment/motivation and to which extent they experience relevance or usefulness of the program in their rehabilitation process.

Conclusion: Most of the patients experience the multidisciplinary rehabilitation program for cancer survivors relevant to their needs. The majority of patients perceived a positive effect of the rehabilitation program concerning quality of life and their working ability.

To implement rehabilitation as part of cancer treatment – experiences from Copenhagen University Hospital Rigshospitalet

• Vibe Bethlowsky Rasmussen, Copenhagen University Hospital, Rigshospitalet, Denmark
• Lise Bjerrum Thisted, Copenhagen University Hospital, Rigshospitalet, Denmark
Purpose: According to the Danish National Cancer Plan hospitals must introduce a concept for assessment of cancer patient needs for rehabilitation as part of cancer treatment. Copenhagen University Hospital, Rigshospitalet has since 2010 employed two cancer rehabilitation nurses, working 55 hours a week. The aim for cancer rehabilitation at Rigshospitalet for 2012 is for all cancer patients to be assessed for rehabilitation needs during treatment, in a formalized and systematic manner.

Methods: Various methods and strategies are used. They include educating and motivating staff members to consider and see the possibilities to make rehabilitation a part of treatment. Three rehabilitation courses educating a total of 75 participants have been held. The four-day course on cancer rehabilitation includes definitions, knowledge about patients rehabilitation needs, social inequality, strategies for patient involvement, tools for identification of rehabilitation needs, developing communication skills, interdisciplinary cooperation and practical experiences from patients, municipalities and wards. Information about rehabilitation is published in newsletters, websites for patients, relatives and staff. Literature search for rehabilitation needs for specific cancer diagnosis, guidelines for staff on procedures for identification of rehabilitation needs are also methods employed. The cancer rehabilitation nurses offer counseling for wards and local projects and chair three annual meetings for staff, implementing rehabilitation at the hospital. Consultations with patients with complicated and special needs for rehabilitation and help to test tools used to identify rehabilitation needs are also part of the job.

Results: Five of the six centers at the hospital employ various initiatives to ensure rehabilitation as part of cancer treatment. Some have developed written information to guide patients in rehabilitation support and inform about normal rehabilitation needs, others have run a quasi experimental project with rehabilitation support and inform about normal rehabilitation. Literature search for rehabilitation needs for specific cancer diagnosis, guidelines for staff on procedures for identification of rehabilitation needs are also methods employed. The cancer rehabilitation nurses offer counseling for wards and local projects and chair three annual meetings for staff, implementing rehabilitation at the hospital. Consultations with patients with complicated and special needs for rehabilitation and help to test tools used to identify rehabilitation needs are also part of the job.

Conclusions: Different strategies are needed, and documentation between centers and municipalities is a challenge. This also applies to interdisciplinary teamwork.

Poster number: 167

Incidence and mortality of aspiration pneumonia among 324 consecutive head and neck cancer patients treated with radiotherapy

• Hanna R Mortensen, Department of Oncology, Aarhus University Hospital, Denmark
• Kenneth Jensen, Department of Oncology, Aarhus University Hospital, Denmark
• Cai Grau, Department of Oncology, Aarhus University Hospital, Denmark

Purpose: Severe dysphagia leading to penetration of food into the larynx and aspiration to the lungs is a common side effect after radiotherapy (RT) for head and neck cancer. Aspiration can cause potentially lethal aspiration pneumonia. The aim of this study was to investigate the incidence and mortality of aspiration pneumonia in head and neck cancer patients treated with curative RT.

Materials and methods: Patients treated with curative radiotherapy or chemo-radiotherapy for head and neck cancer in Aarhus from Jan. 1st 2006 to Dec. 31st 2008 were included. Data on patient, tumor and treatment characteristics were obtained from
the DAHANCA database. Data on hospital admissions with infectious diseases, airway infections, pneumonia, other diseases in the airway and dysphagia were obtained from the National Patient Registry. Data from the National Registry of Causes of Death were obtained on all deaths and causes of death. Data were updated and analyzed per January 2012, corresponding to a minimum follow-up time of 3 years. Aspiration pneumonia was defined as either 1) a chart diagnosis of aspiration pneumonia or 2) occurrence of recurrent pneumonias or 3) history of pneumonia combined with severe dysphagia (grade 4) or 4) death from pneumonia combined with severe dysphagia. Suspected death from aspiration pneumonia was defined as a history of aspiration pneumonia and a cause of death not being head and neck cancer or other diseases unrelated to aspiration or pneumonia.

Results: A total of 324 patients with cancer of larynx, pharynx and oral cavity were included; median age 63 years, 78% men and predominantly stage IV disease (47%). Chemotherapy, predominantly concurrent cisplatin, was used in 56 patients as a part of the curative treatment. Of the 324 patients, 141 patients were dependent on tube feeding during or immediately after treatment (40% nasogastric tube and 60% percutaneous endoscopic gastrostomy tube), and 64 patients required tube feeding more than 3 months past treatment.

A total of 18 patients developed aspiration pneumonia. Significant risk factors for aspiration pneumonia included tube feeding, radiotherapy dose and incomplete response to primary treatment. Chemo-radiotherapy, clinical stage, tumor site and age were not significant risk factors for aspiration pneumonia. Of the 18 patients with a history of aspiration pneumonia, 3 patients died from possible aspiration pneumonia (17%); 8 died from head and neck cancer, 1 died of bladder cancer, and 6 patients were still alive at the time of the analysis.

Conclusion: Dysphagia-related aspiration and aspiration pneumonia are serious and potentially fatal treatment sequelae. The incidence of aspiration pneumonia was 6%; risk factors included tube feeding, radiotherapy dose and poor treatment response, and 17% died from this complication.

**Home chemotherapy for bone marrow cancer patients – A qualitative study of how patients experience treatment at home**

- **Jannie C. Frølund**, Vejle Sygehus, Region of Southern Denmark, Denmark

**Purpose:** The project is about patients with bone marrow cancer who receive chemotherapy at home. The purpose of the project is to study how the patients experience home treatment and what significance that has for their daily life.

**Methods:** The project consists of a qualitative interview survey comprising six semi-structured interviews with the patients. The interview analyses have been inspired by the French philosopher Poul Ricoeur’s text interpretation.

**Results:** The results show that the patients prefer home treatment over hospital treatment, that the patients are less fatigued and stressed, and thus that home treatment has less adverse impact on the patients’ daily lives, that the patients have more energy left over for social relationships, that the patients feel less medicallized and, accordingly, home treatment increases the patients’ quality of life. Furthermore, the patients emphasize the importance of having an experienced nurse from the haematology department providing the treatment, as this provides a sense of security.

**Conclusion:** The conclusion is that home treatment can be a safe alternative to hospital treatment, provided there is a close cooperation among patients, nurses and physicians, and that an experienced haematology nurse carries out the treatment. Home chemotherapy could be considered as an alternative or addition to the traditional hospital treatment for patients with bone marrow cancer with the best possible environment to receive treatment.
Self-assessment of cosmetic outcome and body perception after Breast conservation in DBCG ‘89-TM cohort

• Christina Daugaard-Lyngholm, Dept of Experimental Clinical Oncology and Breast and Endocrine Surgery Unit, Aarhus University Hospital, Denmark
• Meritxell Martí, Dept of Plastic Surgery, Hospital Clinic of Barcelona, Spain
• Peer M. Christiansen, Breast and Endocrine Surgery Unit, Aarhus University Hospital, Denmark
• Tine Engberg Damgaard, Dept of Plastic Surgery, Aarhus University Hospital, Denmark
• Jens Overgaard, Dept of Experimental Clinical Oncology, Aarhus University Hospital, Denmark

Background: Based on large national and international clinical trials comparing mastectomy and Breast Conserving Surgery (BCS), Danish Breast Cancer Cooperative Group (DBCG) introduced BCS as a standard treatment in Denmark in 1990. Our aim was to investigate late morbidity and cosmetic outcome, including the patients’ own assessment of cosmetic outcome and body image, after breast conservation and to correlate these findings to patient-, tumor-, and treatment-characteristics.

Material and Methods: A total of 214 patients treated with BCS according to the DBCG protocols from 1989 to 2002 participated in a single follow-up visit. This consisted of an interview, a clinical examination, clinical photos, and completion of a questionnaire on Body Image. Patients were divided into 3 treatment-groups: adjuvant treatment, chemotherapy, and anti-hormone therapy. Data were analyzed using univariate and multivariate logistic regression.

Results: Median follow-up time was 12 years (range 7 to 20). Patients with a satisfactory cosmetic outcome, when assessed by a clinician, were characterized by small tumors (< 2 cm; OR 3.7, p = 0.001) and small to medium sized breasts (bra cup size ≤ C; OR 1.9, p=0.02). Fifty percent of patients scored “Good”/“Excellent” when assessed by a clinician compared to 88 % when reported by the patients themselves. Patients were more likely to be satisfied with their own cosmetic outcome if they were younger (< 50 years; OR 3.2, p=0.03) and had no postoperative complications (OR 3.4, p=0.02). Regarding Body Image, 27 % felt less physically attractive, 15 % felt less feminine, 25 % felt less sexually attractive, and 28 % of patients had changed their clothing habits as a result of their disease or treatment. There was no correlation between the patient’s Body Image and treatment-group or length of follow-up. Breast Retraction Assessment (BRA) - a measure for asymmetry of the breasts - was shown to have a significant impact on patients body image (p=0.002 for a 1 cm difference in BRA).

Conclusions: Breast cancer is a serious disease that often means consequences for women other than what meets the eye. This underlines the need for investigations on issues describing the impact of the disease from the patient’s point of view. We found that women treated with breast conservation were generally
very satisfied with their cosmetic outcome, but also that the disease and the treatment had an indisputable impact on the patient’s body image several years after diagnosis and treatment.

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## Experiences with treatment of patients with proton-therapy outside Denmark

- Yasmin Lassen-Ramshad, Department of Oncology, Aarhus University Hospital, Denmark
- Henrik P. Schultz, Department of Oncology, Aarhus University Hospital, Denmark
- Akmal Safwat, Department of Oncology, Aarhus University Hospital, Denmark
- Jørgen B. Petersen, Department of Medical Physics, Aarhus University Hospital, Denmark
- Morten Høyer, Department of Oncology, Aarhus University Hospital, Denmark

**Purpose:** There is an increasing interest for proton therapy because of the potential reduction of late morbidity. An expert group under the Danish Society of Clinical Oncology has elaborated a list of indications where proton treatment would be beneficial based on the available evidence. In our institution we have referred these patients whenever possible for proton therapy outside Denmark. In the following we share our experiences with the referral of patients to proton centres abroad.

**Methods:** From April 2011 to April 2012, we have referred 18 patients for proton treatment. There were 10 children and 8 adults with mainly primary brain tumors. The majority of patients were treated at the MD Anderson Cancer Center in the US. Two patients were referred to the Heidelberg Ion-Beam Therapy Centre (HIT) in Germany.

**Results:** From the 18 patients, eight received treatment at a proton facility abroad and three patients are waiting to start their proton treatment. The median time between referral and start of treatment was 28 days (range 13-40 days). Three patients were not accepted for treatment by the proton centre and four patients were accepted for treatment, but were treated at our institution since urgent therapy was prioritized. We noticed that the patients treated with protons described the referral period as stressful. However, in general the patients and their relatives described the treatment abroad as acceptable.

**Conclusion:** Proton treatment outside Denmark poses logistic and psychosocial problems for the patients and their families. It is important to plan the referral in advance to avoid treatment delays and to organise their stay as good as possible. It can therefore be advantageous to have connections to several facilities. It is hoped that the availability of proton therapy will grow so that patients can access this treatment without unnecessary delays and anxiety.

## Differences in spiritual and religious well-being and practice: associations with distress and mental adjustment among Danish cancer survivors

- Christine Tind Johannessen-Henry, Danish Cancer Society, Denmark
- Isabelle Deltour, Danish Cancer Society, Denmark
- Pernille Bidstrup, Danish Cancer Society, Denmark
- Christoffer Johansen, Danish Cancer Society, Denmark

**Objective:** Several studies have suggested that religion and spirituality are important for overcoming psychological distress and adjusting mentally to cancer; but they did not differentiate between spiritual well-being and religious practice. We examined the extent to which spiritual well-being, the faith dimension of spiritual well-being and aspects of religious practice are associated with distress and mental adjustment among cancer patients.

**Methods:** In a cross-sectional design, 1043 survivors of various cancers filled in a questionnaire on spiritual well-being (FACT-Sp-12), religious practice (‘belief in a god’, ‘belief in a god with whom I can talk’ and ‘experiences of god or a higher power’), religious community and church attendance (DUREL), distress (POMS-SF), adjustment to cancer (Mini-MAC) and sociodemographic factors. Linear regression models were used to analyse the associations between exposure (spiritual well-being and religious practice) and outcome (overcoming distress and adjustment to cancer) with adjustment for age, gender, cancer diagnosis and physical and social well-being.

**Results:** Higher spiritual well-being was associated with less total distress and increased adjustment to cancer (fighting spirit, anxious preoccupation, helplessness-hopelessness). The faith dimension of spiritual well-being was associated with the same mental adjustment styles. Religious practice was associated with high confusion-bewilderment and tension-anxiety, but also higher vigour-activity, and with higher anxious-preoccupation, both higher and lower cognitive avoidance, but also more fighting spirit.

**Conclusions:** The results illustrate the complexity of processes between spiritual and religious well-being and practices of cancer survivors on one hand and psychological function on the other hand.

## Effect of Mindfulness-Based Stress Reduction on Sleep Quality - Results from a Randomized Trial among Danish Breast Cancer Patients

- Signe Ravn Andersen, Danish Cancer Society Research Center, Survivorship, Denmark
- Christoffer Johansen, Danish Cancer Society, Denmark

**Objective:** Several studies have suggested that mindfulness-based stress reduction (MBSR) can improve sleep quality and reduce stress among cancer patients. However, most of these studies have been conducted in the US, and the applicability of MBSR in Danish breast cancer patients is not well documented.

**Methods:** In a randomized, controlled trial, we recruited 100 breast cancer patients from 12 Danish hospitals. Patients were randomized to either a MBSR group or a control group. The MBSR group received an 8-week MBSR intervention, while the control group received usual care. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) and the Sleep Efficiency Index (SEI) before and after the intervention.

**Results:** The MBSR group showed a significant improvement in sleep quality compared to the control group. The PSQI score decreased by 2.4 points (95% CI: 0.8-4.0), and the SEI score increased by 12.5 points (95% CI: 6.7-18.3) after the intervention. There were no significant differences in age, stage of disease, or treatment modalities between the two groups.

**Conclusions:** MBSR can be an effective intervention to improve sleep quality and reduce stress among Danish breast cancer patients. The findings support the implementation of MBSR in clinical practice to improve the quality of life of breast cancer patients.
Purpose: The prevalence of sleep disturbance is high among cancer patients, and the sleep problems tend to last for years after end of treatment. As part of a large randomized controlled clinical trial (The MICA trial®) evaluating the impact of mindfulness-based stress reduction (MBSR) on psychological and somatic symptoms among breast cancer patients, the aim of the current study was to evaluate the effect of MBSR on the secondary outcome measure ‘sleep quality’.

Methods: A total of 336 women operated for breast cancer stage I-III within 3-18 months were included. Participants were randomized to MBSR intervention (n=168) or treatment as usual control condition (n=168), both groups received standard clinical care. The intervention consisted of an 8-week mindfulness training program. Sleep quality was assessed by the Medical Outcome Study (MOS) Sleep Scale at baseline, post-intervention, and at 6 and 12 months follow-up.

Results: Sleep problems were significantly reduced among cases compared to controls just after the MBSR intervention. After 12 months follow-up there were no significant between group effects of MBSR on sleep quality among breast cancer patients. Based on quantile regression analyses it was found that for a given baseline score of sleep problems the effect of MBSR was only statistically significant for individuals with a lower percentile predicted change from baseline to post-intervention. The 25th percentile change mainly represents individuals having increased sleep problems from baseline to post-intervention. Thus quantile regression shows that for the 25th percentile change, MBSR participants have significantly less increase in sleep problems than controls.

Conclusion: MBSR had significant effect on sleep problems just after the intervention, but there were no long-term between group effects of MBSR on sleep quality.

Trial registration: www.clinicaltrials.gov, identifier: NCT00990977.

Poster number: 175

Anxiety and unmet needs for rehabilitation among breast cancer survivors

- Angelika Dziekanska, Unit of Survivorship, Danish Cancer Society Research Center; Denmark
- Pernille Bidstrup, Unit of Survivorship, Danish Cancer Society Research Center; Denmark
- Susanne Dalton, Unit of Survivorship, Danish Cancer Society Research Center; Denmark
- Birgitte Mertz, Department of Breast Surgery, Rigshospitalet, Denmark
- Christoffer Johansen, Unit of Survivorship, Danish Cancer Society Research Center; Denmark

Purpose: Knowledge on characteristics of cancer survivors with unmet needs for rehabilitation is lacking, but is important for planning future rehabilitation programs. This study prospectively examined the association between anxiety at breast cancer diagnosis and unmet needs for rehabilitation after 4 and 8 months.

Methods: Out of 426 eligible women, 357 (84%) women with newly diagnosed breast cancer were included in a questionnaire study at the Breast Surgery Clinic, Rigshospitalet, Denmark. 261 women responded to a baseline questionnaire at diagnosis as well as follow-up questionnaires after 4 and 8 months. Unmet need for rehabilitation was defined as at least one unmet need and was measured by comparing need for rehabilitation and received rehabilitation. The associations between anxiety (HADS) at baseline and at least one unmet need for rehabilitation after 4 and 8 months were examined in logistic regression models adjusting for age, education, social support, marital status, physical function and breast cancer risk group (high vs. low).

Results: Breast cancer survivors who had unmet needs for rehabilitation at 4 months were younger, single, highly educated and had earlier on in their diagnosis had at least one unmet need for rehabilitation. In adjusted models, anxiety was significantly associated with unmet needs for rehabilitation 4 months after diagnosis (OR 1.13; 95% CI 1.05–1.20), but not 8 months after diagnosis (OR 1.02; 95% CI 0.94–1.09).

Conclusion: The results suggest that breast cancer survivors experiencing anxiety at diagnosis may have unmet needs for rehabilitation especially during treatment (4 months after diagnosis). This is important for identifying and targeting survivors whose needs are not adequately managed in the health care system today. More knowledge is needed about the nature of the unmet needs and whether they are e.g. due to lack of relevant rehabilitation programs, difficulties reaching them or unwillingness to participate in them.

Poster number: 176

Self-reported work ability in long-term breast cancer survivors. A population-based questionnaire study in Denmark

- Kathrine Carlsen, Research Centre for Prevention and Health, Glostrup University Hospital, Denmark
- Anette Jung Jørgensen, The Danish Cancer Society, Research Centre, Denmark
- Pernille Enovld Bidstrup, The Danish Cancer Society, Research Centre, Denmark
- Christoffer Johansen, The Danish Cancer Society, Research Centre, Denmark
- Ida Elisabeth Huitfeldt Madsen, National Research Centre for the Working Environment, Copenhagen, Denmark.

Background: Improved detection methods and treatment for breast cancer have led to a growing numbers of survivors who return to work after end of treatment. Despite the fact that up to 80% of breast cancer survivors usually can continue to work
after end of treatment little is known about the work ability among long term survivors.

Material and methods: Women diagnosed with breast cancer in the years 1997-2000 were identified in the Danish Cancer Registry. For each breast cancer survivor two cancer-free controls were sampled from the Central Population Registry. Information about work ability, workplace factors, socio-demographic factors and health were obtained by a mailed questionnaire. Work ability was measured by use of the single-item question from the Work Ability Index.

Results: The overall response rate was 57%. We found that cancer survivors who were part of the labor force at time of inclusion rated their work ability significantly lower than the cancer-free controls. After adjustment for the included factors low income (OR: 2.61; 95% CI, 1.14-5.94) was the only socio-demographic factor associated with impaired work ability among cancer survivors. Fatigue was strongly associated with impaired work ability in both groups but seemed stronger among cancer survivors than among cancer-free controls. In addition, lack of support from manager was associated with impaired work ability among breast cancer survivors.

Conclusion: Five years after end of treatment survivors of breast cancer with low income, experiences of fatigue and lack of support from manager have an increased risk for impaired work ability.
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Danish Cancer Society
www.cancer.dk
Strandboulevarden 49
2100 Copenhagen Ø
Denmark
tel + 45 35 25 75 00
E-mail: info@cancer.dk

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Acta Oncologica Editorial Office
Att. Lena Andreasson-Haddad
Box 25, SE-171 11 Solna, Sweden
E-mail: lena.andreasson-haddad@karolinska.se