

Adult Life after Childhood Cancer in Scandinavia

- A large patient cohort from Denmark, Finland, Iceland, Norway and Sweden –
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INTRODUCTION

With the remarkable improved survival of childhood cancer, morbidities and late complications related to the cancer and its treatment become more apparent.

The aim of ALiCCS is to investigate these complications in a large population-based setting, using the unique resources of nationwide health registries in the Nordic countries.

METHODS

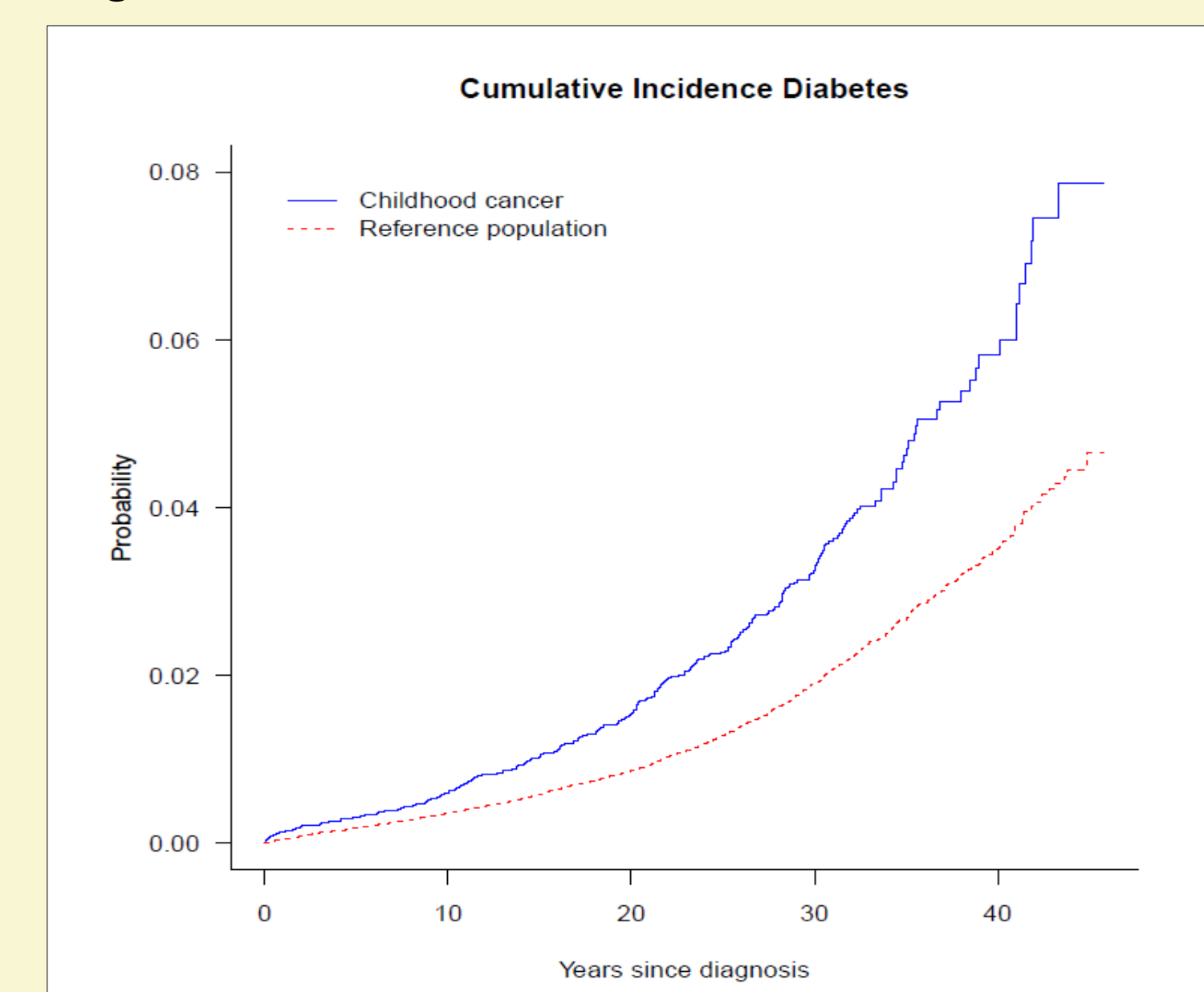
- The cohort will include approximately 55,000 children diagnosed with cancer before age 20 from beginning of cancer registrations in the 1940s through 2008.
- A population comparison cohort (1:5) will be randomly selected from the Central Population Registries.
- Firstly, a screening for late effects will be performed. Study subjects will be followed up in the National Patient, Prescription and Medical Birth Registries and the Cause of Death Registries in the Nordic countries.
- Secondly, the effect of cancer treatments on development of late effects will be assessed in case-cohort studies. Information on treatment exposure will be retrieved from medical records and dose-response analyses will be performed. Cox proportional hazard models will be used to estimate the relative risks of the selected late effects.



RESULTS

Preliminary analyses on data from Denmark and Sweden show an increased risk of diabetes in survivors compared to the reference population, continuing for more than 40 years after diagnosis (Figure 1.).

Figure 1. Cumulative incidence of diabetes



The highest risk is found among survivors of renal tumors and leukemias (Table 1.).

Table 1. Risk of diabetes by cancer diagnosis

Primary cancer diagnosis	%	HR	95% CI
I Leukemias	20,1	2,61*	1,96-3,48
II Lymphomas	13,4	1,47*	1,08-2,00
III CNS Tumors	24,9	1,79*	1,46-2,21
IV Peripheral Nervous Cell Tumors	4,4	1,95*	1,05-3,64
V Retinoblastoma	2,6	1,42	0,74-2,73
VI Renal Tumors	4,3	3,67*	2,49-5,42
VII Hepatic Tumors	0,7	1,91	0,27-13,6
VIII Malignant Bone Tumors	4,5	1,00	0,54-1,86
IX Soft Tissue Sarcomas	6,1	1,09	0,69-1,74
X Germ Cell Tumors	6,4	1,84*	1,25-2,69
XI Carcinomas	11	1,07	0,78-1,47
XII Other and Unspecified Neoplasms	1,6	1,05	0,34-3,26

Stratified by country and gender, control group set as a reference. * Significant

PERSPECTIVES

The initial research projects within the ALiCCS cohort will focus on:

- Cardiovascular- and pulmonary diseases
- Renal- and gastrointestinal disease
- Endocrine- and pregnancy outcomes

These will be the first population-based studies on late effects in childhood cancer survivors.