

Background: Infant cancers have long been a difficult area of study. The most recent report on US infant cancer epidemiology was based on data from 1980s to early 1990s.

Objectives: To provide an update-to-date report on infant cancer incidence in US.

Methods: The study used the publicly available data from the Surveillance, Epidemiology, and End Results (SEER) program. Additional data on month of age at diagnosis were requested. The study population of interest was limited to children diagnosed with primary malignant cancers within 1 year old during 2000-2010. The findings on cancer incidence were further stratified by age in month, sex, calendar year, and major cancer types based on International Classification of Childhood Cancer (ICCC). All analyses were performed using SEER Stat 8.1.2 software.

Results: From 2000-2010, a total of 3,032 newly diagnosed infant cancer cases were recorded in SEER. The overall incidence rate is 237.6 per 1 million (/1 M), which remains largely the same among all the calendar years. The risk is slightly higher in males than females (247.4/1 M vs. 227.3/1 M). Neuroblastoma and other peripheral nervous cell tumors are the most frequent cancer type with an overall incidence rate of 52.4 /1 M. They are followed by leukemias (47.2 /1 M), general central nervous system (CNS) tumors (35.2 per 1 M), retinoblastomas (26.4 per 1 M), and germ cell tumors (20.6/1 M). The cancer type ranks largely the same between males and females. The gross majority of cancers display peak incidence in the first month of life and then generally decrease over the following 11 months of infancy.

Conclusions: Our findings on infant cancer incidence are consistent with the data reported in 1980s and early 1990s. No significant changes were detected after stratified by calendar years, age in month, sex, and ICCC cancer types.

351. Chronic Comorbidities in Children and Adolescents with Type 1 Diabetes

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Background: Limited quantitative data exist on the burden of chronic comorbidities in children and adolescents with type 1 diabetes (T1D). Such knowledge is necessary for the development of guidelines and prevention programs.

Objectives: To determine the incidence of chronic comorbidities in children and adolescents with T1D and to compare the risks with the diabetes-free children.

Methods: A population-based cohort study was conducted using the Dutch PHARMO-RLS that comprises community pharmacy dispensing records linked to hospital admissions. Insulin prescriptions were used as a proxy to identify incident cases of T1D. All patients (<19 years) with at least 2 insulin prescriptions (T1D cohort), and up to 4 diabetes-free children with the same age and sex but without any anti-diabetic prescription (reference cohort) were sampled (1999-2009) and followed for a median of 5 years. The incidence of 9 common chronic comorbidities was assessed using hospital admissions (ICD-9 codes), and/or dispensing records (ATC codes). Cox proportional hazard analysis was used to estimate the strength of the association between T1D and comorbidities, expressed as hazard ratios (HR (95% confidence intervals (CI)), and to assess effect modification by age and sex.

Results: A total of 925 T1D patients and 3591 reference children (49.3% girls, mean age 10.1 [SD 4.5] years) met the inclusion criteria. T1D was associated with an increased risk (HR (95%CI)) of thyroid disease 14.9 (6.8-32.5), non-infectious enteritis and colitis 5.9 (3.0-11.5), cardiovascular disorders 4.4 (3.1-6.1), mental disorders 2.1 (1.4-3.0), epilepsy 2.0 (1.1-3.8), and (obstructive) pulmonary disease 1.4 (1.1-1.7). The incidences of other comorbidities (malignant disorders, anemia, and migraine) were also higher in the T1D cohort compared with the reference cohort, but not statistically significant. No effect modification by age and sex was found.

Conclusions: Risks of 6 comorbidities were significantly higher in children and adolescents with T1D (during the early years after diagnosis of T1D) compared with the diabetes-free children and adolescents which confirm the necessity of applying regular monitoring programs early after the diagnosis of T1D.

352. Antimuscarinic Utilization in the Pediatric Population in the United States, 2000-2011

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