

Short-term survival of children with cancer

NCIN Data Briefing

Children under 15 years of age who are diagnosed with cancer have high survival rates overall. As with older age groups, children with cancer are at greatest risk of dying in the first year following diagnosis. Therefore reductions in short-term mortality could make an important contribution to increasing long-term survival. This Data Briefing explores patterns of short-term survival and early mortality among children with cancer in the UK according to calendar period, age at diagnosis, sex and type of cancer.

Trends over time

Early mortality of children with cancer in the UK has decreased since the early 1990s (Fig. 1). The proportion of children who died within 30 days from diagnosis fell from 2.4% in 1993 to 1.3% in 2009. For deaths within 90 days the decrease was from 4.4% to 2.1%, and for deaths within 1 year it was from 12% to 8%. Improved survival has resulted in decreasing numbers of deaths of children with a previous diagnosis of cancer, and the numbers have fallen for all lengths of time since diagnosis (Fig. 2). In Great Britain throughout 1990-2009 the proportions of all deaths of children with a previous cancer diagnosis that occurred at different intervals since diagnosis remained fairly constant; 8% of deaths were within 30 days, 7% were between 30 days and 90 days and 29% were between 90 days and 1 year.

Fig. 1) Early mortality of children diagnosed with cancer at age <15 by year of diagnosis, UK, 1993-2009

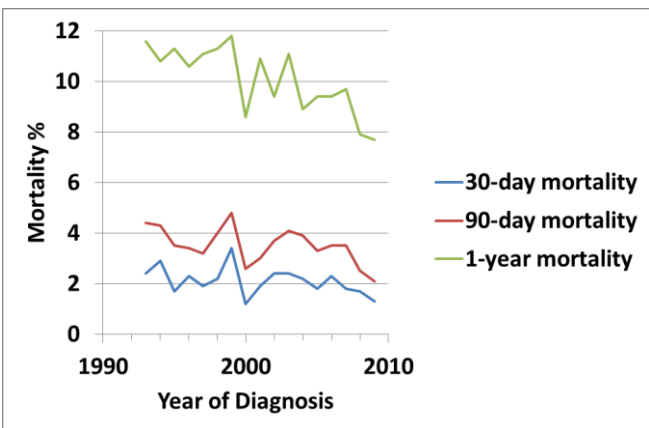
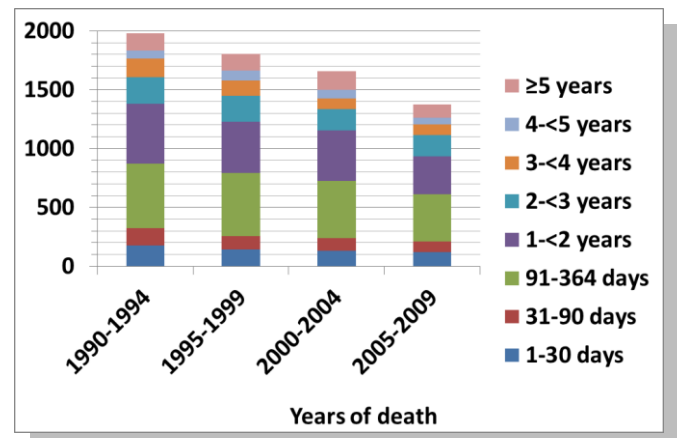


Fig. 2) Children with previous cancer diagnosis dying at age <15, Great Britain, 1990-2009 Interval from diagnosis to death by year of death



Variation by age and sex

Among children diagnosed with cancer in the UK during 2001-2009, early mortality decreased with age at diagnosis (Fig. 3). The 30-day mortality rate for infants diagnosed in the first year of life was 4.9% compared with 1.9% for children diagnosed at age 1-4 years, 1.7% at 5-9 years and 1.4% at 10-14 years. The 1-year mortality rates were 19% for infants under 1 year of age, 8.9% for children aged 1-4 years, 8.7% for children aged 5-9 years and 7.6% for children aged 10-14 years. There was little difference between 30-day and 1-year mortality rates for boys (1.9% and 9.2% respectively) and for girls (2.1% and 9.5% respectively).

KEY MESSAGE: Short-term survival of children with cancer is very high. Fewer than 10% of children die within 1 year after diagnosis, and only 2% within 30 days. The scope for improving short-term survival still further is greatest for infants under 1 year of age and for children with acute myeloid leukaemia, central nervous system tumours and hepatic tumours.

Fig. 3) Early mortality of children with cancer by age at diagnosis, UK, 2001-2009

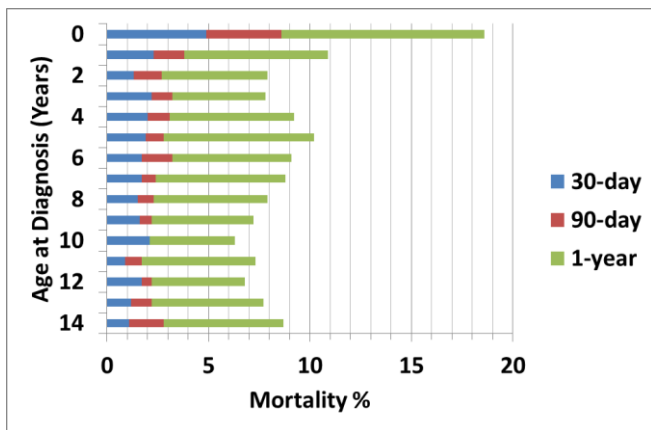
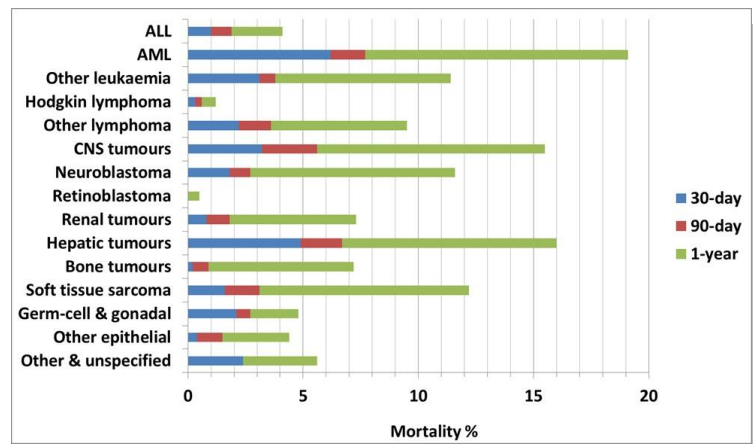


Fig. 4) Early mortality of children with cancer by type of cancer, UK, 2001-2009



Variation by type of cancer

There was marked variation in the early mortality rates between the main types of childhood cancer (Fig. 4). Short-term survival was especially high for retinoblastoma and Hodgkin lymphoma, with 1-year mortality around 1%. Early mortality was highest among children with acute myeloid leukaemia, central nervous system tumours and hepatic tumours; 1-year mortality was above 15% for all these groups. The 30-day mortality rate was 1% for children with acute lymphoblastic leukaemia and less than 1% for Hodgkin lymphoma, retinoblastoma, renal tumours, bone tumours, and carcinomas and melanomas; 30-day mortality exceeded 5% only for acute myeloid leukaemia. Acute myeloid leukaemia also has one of the highest rates of early mortality for any type of cancer among teenagers and young adults aged 15-24 years – see the Data Briefing on short-term survival for this age group.

Conclusion

Fewer than 10% of children with cancer die within 1 year following diagnosis, and only 2% within 30 days. The groups of patients with the highest early mortality and correspondingly the greatest scope for improving short-term survival still further are infants under 1 year of age and children with acute myeloid leukaemia, central nervous system tumours and hepatic tumours.

FIND OUT MORE:

The National Registry of Childhood Tumours (NRCT) is the lead Cancer Registry for cancer in children. Other information about childhood cancer including the methodology for this data briefing can be found at <http://www.ccrq.ox.ac.uk>

Other useful resources within the NCIN partnership:

Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals

<http://info.cancerresearchuk.org/cancerstats/>

The National Cancer Intelligence Network is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research. Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.