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SSM annual scientific meeting 2017

Oral presentations (OP)Wednesday 6 September 2017 Children 1

OP02 Trends in cure and relapse by clinical characteristics for children diagnosed with leukaemia aged 0–17 years in yorkshire 1990–2009: a population-based study FREE

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Abstract

Background The 10 year survival estimates for children aged 0–14 years diagnosed with leukaemia have increased from 23% during the early 1970s to 81% for 2001–2005. Statistical cure models offer an alternative approach to examining survival by simultaneously estimating the proportion of patients cured and the survival of those ‘uncured’. The proportion cured is defined as the proportion of patients as a group for whom there is no excess mortality compared to the general population. The aims of this study were to estimate the cure proportion for childhood leukaemia and examine trends by clinical prognostic risk factors. Trends in relapse free survival were also examined.

Methods Children aged 0–17 diagnosed with leukaemia between 1990 and 2009 were extracted from the Yorkshire Specialist Register of Cancer in Children and Young People (n=583). Flexible parametric cure models were used to estimate cure proportions and median survival times (MSTs) of those ‘uncured’ by age at diagnosis, sex, diagnostic subtype, white cell count (WCC), and period of diagnosis. A further cure model based on relapse free survival and a competing risk model for relapse with death as a competing risk were also fitted to examine patterns of relapse.

Results The standardised (adjusting for age, sex, subtype and WCC) cure proportion increased from 0.63 (95%CI: 0.55–0.70) for those diagnosed between 1990 and 94 to 0.83 (95%CI: 0.75–0.88) for those diagnosed 2005–2009. Over this same time period the MST of the uncured remained around 2 years. There were significant differences in cure proportions by age, subtype and WCC, and differences in MST by age and subtype. Models based on relapse free survival found that the proportion

cured increased from 0.45 (95%CI: 0.38–0.53) to 0.78 (95%CI: 0.71–0.84) and the MST to relapse or death remained between 1.5–1.7 years. The risk of relapse decreased over time (Hazard ratio 0.18 (95%CI: 0.10–0.31) for 2005–2009 compared to 1990–1994).

Conclusion These results demonstrate that the proportion of patients cured, defined either by overall survival or relapse free survival, has increased substantially. There was no change in the median survival time of the uncured group during this time period, however, the risk of relapse has decreased. Cure models provide an alternative and clinically informative method to assess trends in survival for cancer patients.

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