O-075 Prognostic Value of Age in Patients with Wilms Tumour Treated According to International Society of Paediatric Oncology (SIOP) 93-01 and SIOP 2001 Protocols

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Background/Objectives: Age has been suggested to be a prognostic factor for recurrence and mortality in patients with Wilms tumour (WT). In this study, we assess the prognostic value of age and cutoffs for risk stratification in paediatric patients with unilateral WT treated according to recent International Society of Paediatric Oncology(SIOP) protocols.

Design/Methods: Patients (6 months-18 years) with stage I-IV WT were derived from the SIOP93-01 and SIOP2001 database. Only patientswho received preoperative chemotherapy were included. The prognostic value of age at diagnosis, per year/categorized, for 5-year event-free survival (EFS) and overall survival (OS) was assessed using the Kaplan Meier method, log-rank test and multivariable Cox regression models. Martingale residual plots were used to assess the functional form of age. The multivariable analysis was adjusted for gender, biopsy (yes/no), pathological stage, histological classification and tumour volume at surgery.

Results: 5386/7880 patients met the inclusion criteria; stage I: 46%, stage II: 23%, stage III: 17%, stage IV: 15%. Median age at diagnosis was 3.4 years (interquartile range, IQR: 2.0–5.1) and median follow-up was 6.3 years (IQR: 3.0-8.6). Estimated 5-year EFS and OS were 84% (95%CI 83.3-85.3) and 93% (95%CI 91.9-93.4), respectively. Assessment of martingale residual plots suggested a linear trend for age in both EFS and OS. Significant differences in EFS and OS were found between ages < 2, 2-4, 4-10 and ≥ 10 (log-rank $p< 0.0001$). In multivariable analyses, increasing age was associated with poorer EFS (linear trend $p< 0.0001$). OS was lower in patients ≥ 4 years compared to patients < 2 years (HR= 1.32, 95%CI 1.13-2.57). No linear trend was found. Higher stage, histological risk group and volume were associated with poorer OS and EFS in univariable and multivariable analyses.

Conclusions: Survival worsens with increasing age in patients with WT. However, our results do not seem to justify the use of age cutoffs for risk stratification in pretreated patients.