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Background: To reduce cisplatin-related toxicity in the treatment of paediatric malignant germ-cell tumour (MGCT), the UK Children's Cancer and Leukaemia Group evaluated survival and toxicity of carboplatin-based JEB chemotherapy (carboplatin 600 mg/m² or AUC 7.9; etoposide 360 mg/m²; bleomycin 15 mg/m²) in the GCII and III trials.

Methods: GCII used an n+2 strategy of JEB courses. GCIII risk-stratified patients to low-risk (stage 1); high-risk (AFP >10,000 U/L; stage IV except germinomas and testis <5; Stage II-IV thoracic) and intermediate risk. Low-risk patients received chemotherapy only if disease progressed, intermediate-risk patients received 4 and high-risk patients 6 cycles of JEB. In GCIII, two-thirds of carboplatin doses were calculated by GFR, the rest by surface-area.

Results: From 1989–1997, 137 patients were treated with JEB on GCII (median 5 cycles; range 3–8). Five-year event-free survival (EFS) was 88% and overall survival (OS) 91%. From 2005–9, 65 patients were treated with JEB on GCIII: 4 relapsed low-risk, 23 intermediate-risk and 38 high-risk. Five-year EFS and OS was 92% and 95% and in non-germinomas 91% and 94%. 37% were adolescents (21% non-germinoma) with only one relapse. Myelosuppression was a common but manageable toxicity; significant nephro- or ototoxicity was rare in both studies. For cisplatin-treated patients in the UK, deafness was seen in 10% and renal impairment in 45%. There was no discernible difference in carboplatin dose whether calculated by body surface-area or creatinine clearance. JEB chemotherapy leads to excellent survival in paediatric MGCT with minimal documented long-term toxicity. Carboplatin will be evaluated against cisplatin in AGCT1531.

GCT-42 Validation of the MaGIC paediatric germ cell tumour risk stratification

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Background: A new risk stratification for metastatic nonseminomatous paediatric germ cell tumours (NS-GCT) was published in 2015 by

the Malignant Germ Cell International Consortium (MaGIC) based on analysis from 25 years of clinical trial data from Children's Oncology Group and Children's Cancer and Leukaemia Group (United Kingdom, UK). The MaGIC risk stratification identified age ≥ 11 y, advanced stage and extragonadal or ovarian primary as adverse prognostic indicators; this served as the basis for three new international clinical trials. To validate the risk stratification, three independent datasets have provided by the UK, French and Brazilian Pediatric Clinical Trial groups. **Methods:** The MaGIC risk stratification was tested in datasets from 326 Brazilian patients with NS-GCT, treated on one of three protocols, TCG91, TCG99, TCG2008 and 45 UK patients treated on GC3 (not part of original MaGIC analysis). A non-mixture cure model was used to characterize the relationship between variables and event-free survival. The likelihood ratio test of a p-value >0.05 was used to eliminate terms using stepwise selection. The predicted probability of remaining event-free survival was estimated from the 2015 model. The C-index at 5 years (Uno et al. Statist Med 2011) was used to assess the robustness of this prediction. An additional 239 French cases have subsequently been made available.

Results: The original MaGIC risk stratification was verified in two independent datasets from the UK and Brazil, supporting its use in prospective clinical trial design. Further results based on the additional French cases will be presented.

GCT-43 Clinical characteristics, treatment, and outcomes of children with primary vaginal endodermal sinus tumours

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Background: To analyze the clinical characteristics, treatment and outcomes of children with primary vaginal endodermal sinus tumours.

Methods: We conducted a retrospective analysis on clinical and pathological data of 21 children with pathologically confirmed primary vaginal endodermal sinus tumour treated at Peking Union Medical College Hospital between January 1997 and January 2018. Median age was 11 months (range: 4 months to 4 years). All patients were treated with chemotherapy, mainly PEB (cisplatin/etoposide/bleomycin) after an intravenous port was implanted into the subclavian vein. Detection of serum alpha-fetoprotein level, examination under anesthesia and biopsy were performed before and after treatment to evaluate tumour status.

Results: Vaginal bleeding or blood-tinged discharge was the most common clinical presentation. The patients received an average of 5.7 courses of chemotherapy (range 3–13 courses). 20 patients obtained complete remission (95.2%). The patients were followed up for a median of 44 months (range: 6 months to 20 years). Nineteen patients (90.5%) remained alive. One child died of disease progression. One infant received 4 courses of PEB chemotherapy and died of infection and heart failure. Two patients developed vaginal recurrence and obtained complete remission after chemotherapy again. Vaginal endodermal sinus tumours are rare in children and extremely sensitive to chemotherapy. To allow preservation of sexual and reproductive function, PEB chemotherapy without surgery should be considered for children with vaginal endodermal sinus tumours.