two $BE_{360}P$ cycles. 111 is the largest prospective trial investigating adjuvant $BE_{500}P$ x1 in high-risk stage one NSGCTT. The adoption of $BE_{500}P$ x1 as standard would reduce overall exposure to chemotherapy in this young population.

GCT-10 Outcomes of adolescent males with extracranial metastatic germ cell tumours compared with children and young adults: A report from the Malignant Germ Cell Tumour International Consortium (MaGIC) group

F. Shaikh[1], D. Stark[2], H. Dang[3], C. Xia[3], M. Krailo[3], S. Stenning[4], F. Pashankar[5], C. Rodriguez-Galindo[6], T. Olson[7], S. Depani[8], S. Stoneham[9], J. Nicholson[10], M. Murray[10], J. Amatruda[11], D. Billmire[12], A. Fonseca[1], A. Lindsay Frazier[13]
[1]The Hospital for Sick Children, University of Toronto; [2]Leeds Institute of Cancer and Pathology; [3]Children's Oncology Group; [4]Medical Research Council Clinical Trials Unit at University College London; [5]Yale Cancer Center; [6]St Jude's Children's Cancer Hospital; [7]Aflac Cancer Centre, Children's Healthcare of Atlanta, Emory University; [8]University of Birmingham; [9]Children's and Young Persons Cancer Services, University College London Hospital Trusts; [10]Cambridge University Hospitals NHS Foundation Trust; [11]University of Texas Southwestern Medical Center and Children's Medical Center Dallas; [12]Riley Hospital for Children; [13]Dana-Farber Cancer Institute

Background: Adolescents with extracranial malignant germ cell tumours (GCTs) are often treated on the same regimens developed for children, but more closely resemble the clinical characteristics of young adult patients. We sought to determine whether event-free survival (EFS) for adolescents with GCTs was more like that of children or young adults.
Methods: We assembled an individual patient database of eleven GCT trials: eight conducted by paediatric cooperative groups and three by an adult group. We selected male patients aged 0–30 years treated with platinum-based chemotherapy for metastatic, nonseminomatous malignant GCTs of the testis, retroperitoneum, or mediastinum. We categorized age-group as children (0 to <11 years), adolescents (11 to <18 years), or young adults (18 to <30 years). We compared EFS and adjusted for calculated IGCCCG risk-group using Cox proportional hazards analysis.
Results: 593 patients met inclusion criteria, of whom 90 were children, 109 were adolescents, and 394 were young adults. The 5-year EFS for adolescents (72%; CI = 62–79%) was significantly lower than for children (90%; CI = 81–95%, p = 0.003) or young adults (88%; CI = 84–91%, p < 0.001). Risk-group was significantly associated with EFS in the adolescent age-group (p = 0.002). In a Cox multivariable analysis, the difference between adolescents and children remained significant (HR = 0.30, p = 0.001), but the difference between adolescents and young adults did not (HR 0.66, p = 0.114). EFS for adolescent patients with extracranial metastatic GCTs was similar to young adults but significantly worse than children. This finding may have important implications for how adolescent patients are treated.

GCT-11 Site of extranodal metastasis impacts survival in patients with testicular germ cell tumours

N. Singla MD[1,*], H.D. Patel MD, MPH[2,*], R.A. Ghandour MD[1], Y. Freifeld MD[1], S.L. Woldu MD[1], P.M. Pierorazio MD[2], A. Bagrodia MD[1]
[1]Department of Urology, University of Texas Southwestern, Dallas, TX, USA; [2]The James Buchanan Brady Urological Institute and Department of Urology, Johns Hopkins University School of Medicine, Baltimore, MD, USA
*Co-First Authors

Background: We systematically evaluated the impact of the location and burden of extranodal testicular germ cell tumour (TGCT) metastases on survival using a large, nationally representative population-based cancer registry.
Methods: Men with stage III TGCT captured by the Surveillance, Epidemiology, and End Results registry from 2010–2015 with distant extranodal metastases were identified. Clinicopathological information were collected, and patients were subdivided based on specific organ site(s) of metastatic involvement (lung, liver, bone, and/or brain). Kaplan–Meier analysis and multivariable Cox regression were used to evaluate cancer-specific survival (CSS), and model performance was assessed using Harrell's C-statistic.
Results: 969 patients with stage III TGCT were included, with predominantly nonseminomatous histology (84%). Most patients (91%) had pulmonary metastases, while 20%, 10%, and 10% had liver, bone, and brain metastases, respectively. Over a median follow-up of 21 months, 19% of men died of TGCT. When grouped by primary site of metastasis, patients with more than one extrapulmonary metastasis exhibited the worst CSS (HR 4.27 (95% CI 2.60–7.00), vs. isolated pulmonary involvement, p < 0.01). Among patients with isolated extrapulmonary involvement, those with brain metastases had the poorest survival (HR 3.24 (95% CI 1.98–5.28), p < 0.01), followed by liver (HR 2.29 (95% CI 1.56–3.35), p < 0.01) and bone (HR 1.97 (95% CI 1.11–3.50), p = 0.02). Multivariable Harrell's C-statistic was 0.71. Site of metastatic involvement impacts survival outcomes in patients with TGCT, which may reflect both the aggressive biology and challenging treatment of these tumours. Further incorporation of organotropism into current prognostic models for metastatic TGCT warrants attention.

GCT-12 Pattern of events in children, adolescents and young adults with testicular germ cell tumour (TGCT): The MAKEI-experience

M. Heimbrodt[1], P. Hillebrand[1], S. Schönberger[1], D.T. Schneider[2], C. Teske[1], I. Leuschner[3], C. Vokuhl[3], D. Harms[3], U. Göbel[4], G. Calaminus[1]
[1]Department of Paediatric Hematology and Oncology, University of Bonn, Bonn, Germany; [2]Clinic of Paediatrics, Municipal Hospital, Dortmund, Germany; [3]Paediatric Tumour Registry, Dept. of Paediatric Pathology, University of Kiel, Kiel, Germany; [4]Coordination Center for Clinical Studies, ESPED Surveillance Unit, University Düsseldorf Germany

Supported by the German Cancer Aid and the Barbara and Hubertus Trettner foundation.

Background: TGCT comprise children, adolescents and young adults. Outcome is excellent in young boys, whereas in adolescents this is dependent on stage and tumour composition.
Methods: Between 1st January 1996 and 31st of March 2017, 1895 patients with GCT were treated according to consecutive MAKEI protocols. 375 patients had TGCT: 89 teratoma, Lugano stage I, 286 malignant GCT who presented with stage Lugano I: 154, Lugano II: 102 and Lugano III: 30.
Results: In teratoma patients no events occured. In 286 malignant TGCT, 28 events occured. 8/28 died of disease (DOD) at first treatment. 7/8 who died had choriocarcinoma (CHC). The other events were: 18 relapses, one progression, one second malignancy. 16/18 relapsed were adolescents. 16/18 patients had mixed malignant histologies at primary diagnosis. Events in Lugano I were one secondary tumour and 4 relapses, 2 after watch and wait and 2 after platinum-based chemotherapy. All of them could by salvaged by additional platinum-based chemotherapy. In Lugano II/III, all patients received platinum-based chemotherapy at initial treatment. In Lugano II, 11 events were reported, two DOD in first therapy and 9 relapses. 8 of them could be salvaged by surgery, platinum-based or another

chemotherapy. In Lugano III, 12 events occured: 6 DOD during initial treatment, one progression, 5 relapses. All of these patients had received platinum-based chemotherapy. Of the 5 relapses, 4 could by salvaged by high-dose platinum chemotherapy or other regimes. One patient died after high-dose platinum chemotherapy.

GCT-13 Treatment outcome of extracranial germ cell tumours in Chinese children in Hong Kong

P.W. Yau[1], C.H. Li[2], M.K. Shing[3], S.C. Ling[4], G.C.F. Chan[5]
[1]Department of Paediatrics, Queen Elizabeth Hospital, Hong Kong SAR, China; [2]Department of Paediatrics, Tuen Mun Hospital, Hong Kong SAR, China; [3]Department of Paediatrics, Prince of Wales Hospital, Hong Kong SAR, China; [4]Department of Paediatrics, Princess Margaret Hospital, Hong Kong SAR, China; [5]Department of Paediatrics, Queen Mary Hospital, Hong Kong SAR, China

Background: We reviewed the treatment outcome for children with extracranial germ cell tumour (GCT) in Hong Kong.
Methods: Prospective territory-wide cohort study of children with GCT treated in five paediatric oncology centres in Hong Kong from January 1995 to December 2017. All patients were treated with a unified treatment protocol (HK-GCT protocol, adopted from CCLG GC protocol). Surgery was the only treatment for non-malignant GCT or early-stage malignant GCT. Carboplatin/Etoposide/Bleomycin (JEB) chemotherapy was directed to advanced stage disease.
Results: 205 patients enrolled (5% of childhood cancers in Hong Kong compared with 3% in Western populations). Age-range is day one of age to 18.6 years. The majority groups of histology were teratoma (51.7%), yolk-sac tumour (25.9%), mixed GCT (13.2%) and germinoma (5.4%). The primary sites were gonad (53.2%), mediastinum (15.6%), sacrococcygeal region (14.6%), abdomen (8.8%), pelvic (2.4%) and non-CNS head & neck (1%). The stages of the GCT patients were I (63.9%), II (6.8%), III (16.6%) and IV (12.7%) respectively. 58% patients were treated with surgery alone and 38.5% patients received JEB chemotherapy. The overall 5-year overall-survival was 91.3% (±2%) and 5-year event-free-survival was 87.1% (±2%). The median follow-up time was 8.3 years with 163 patients (79.5%) alive and disease-free. Eighteen cases relapsed (8.8%), 16 patients died (7.8%) and 26 patients lost to follow-up (12.7%). Seven patients (3.4%) developed second cancer. Current treatment of extracranial GCT in Chinese children is effective and comparable to Western studies; risk-stratified treatment is effective/safe. The second cancers deserve further investigation for underlying risk factors.

GCT-14 Rare localization in 44 paediatric germ cell tumours

G.E. Martins[1], A.G. Vieira[1], C.D. Macedo[2], R. Melaragno[3], F.W. de Faria[4], M.T. Almeida[5], L.F. Lopes[1]
[1]Department Pediatric Oncology. Barretos Children's Cancer Hospital, Barretos, Brazil; [2]Department Pediatric Oncology. Unifesp/GRAACC, São Paulo, Brazil; [3]Department of Pediatric Oncology. Santa Marcelina Hospital, São Paulo, Brazil; [4]Department of Pediatric Hematology and Oncology, Children's Hospital of Brasilia, Brasilia, Brazil; [5]Department of Pediatric Hematology and Oncology, University of Sao Paulo, Sao Paulo, Brazil

Background: There are few studies describing germ cell tumours (GCT) arising from rare primary sites such as head and neck, vagina among others.
Methods: We reviewed three National Brazilian Protocols (GCT 91, 99 and 2008) and identified 44 cases of GCTs arising from rare regions.
Results: Childhood GCT arising from kidney, dorsal region, pericardial, midline between stomach and esophagus, uterus, abdomen, vagina and head neck were identified. Vaginal GCT accounted for 27.9% of the cases, head and neck 41.8% and others 30.3%. From 18 cases of head & neck, histology were for the majority pure or immature teratoma, followed by yolk-sac tumour (YST) less often, then embryonal carcinoma and mixed GCTs. The most common histological subtypes of vaginal disease were YST. Most vaginal tumours were high risk, in contrast with head & neck tumours, where the majority were low-risk. Overall survival (5y OS) was 83.3%, 93.8% and 84.6% for vagina, head & neck, and rare sites, respectively. GCTs arising in rare locations with malignant histology could be treated with excellent rates of survival including the ones who presented vaginal primary. Usually tumours in rare sites lead to worse rates of survival in relation to other rare sites. This may occur due to resection and/or staging, since 83% of these tumours were classified as high-risk. Regarding benign tumours, the survival rate was related exclusively to resection.

GCT-15 Overcoming patient factors in the care of under-served testicular cancer patients

N. Chertack MD[1], R. Ghandour MD[1], N. Singla MD[1], Y. Freifeld MD[1], V. Marguis MD[1], S. Woldu MD[1], A. Bagrodia MD[1]
[1]Department of Urology, University of Texas Southwestern, Dallas, USA

Background: To determine whether patient factors at a safety net hospital are overcome through the standardized treatment of testicular cancer (TC) at a university tertiary care center.
Methods: The electronic medical records of patients who underwent orchiectomy at our university and safety net hospitals from 2006 to 2018 were reviewed. Variables were compared based on treatment setting. Comparison of continuous variables were reported as medians, and categorical variables were reported as percentages.
Results: 95 patients (47%) at the university hospital and 106 patients (53%) at the safety net hospital were included. Safety net patients had delayed presentation after symptom onset (median 65 vs 31 days, $p = 0.001$), were more likely to initially present to the emergency department (76% vs 8%, $p < 0.001$), and had shorter median time from diagnosis to orchiectomy (1 vs 4 days, $p < 0.001$). These patients had larger median tumour size (50 vs 30 mm, $p < 0.001$), were more likely to have higher T-stage ($p = 0.018$), were less likely to be Stage I (58% vs 73%, $p = 0.028$) and more likely to be Stage III (23% vs 9%, $p = 0.013$). However, there was no significant difference in median numbers of surveillance imaging (3 vs 3 CT scans, $p = 0.77$), urology clinic visits (4 vs 4 visits, $p = 0.73$), rate of cancer recurrence (13% vs 9%, $p = 0.51$), or mortality (4% vs 0%, $p = 0.12$) between safety net and university patients (Table 1). The integrated care of safety net patients at our academic centre appears to overcome socioeconomic barriers that exist in the treatment of testicular cancer.