Setting the Scene: Testis, Ovarian and Paediatric GCT Disease

GCT-01 An historical overview of testis cancer

A. Lorch[1]
[1]University Hospital of Zurich, Switzerland

Background: Over the past five decades, the use of well-validated, guideline-based strategies including histology, initial localization of the tumour and exact stage at the time of diagnosis resulted in high cure rates in newly diagnosed patients with germ-cell cancer (GCC), even with widespread metastatic disease. Overall, more than 90 percent of patients will be cured after adequate first-line treatment. However, about 30% of those with metastatic disease at initial presentation corresponding to about 5–10% of all GCC patients will experience refractory disease with progression or recurrence at some time point with the need for further therapy. Improving outcomes for such patients is a clinical priority.
Methods: Comprehensive literature review.
Results: Salvage treatment is far more complex and less validated than first-line treatment as it is rare, patient cohorts are more heterogeneous and prognostic factors seem to impact more. Prior to initiation of any salvage treatment, several factors have to be considered: verification that first-line treatment has failed, search for metastatic sites and extent of disease, assessment of known prognostic factors and finally the choice of the optimal salvage strategy. Careful case selection is always required in this unique tumour entity – affecting usually a very young patient population – to avoid overtreatment and unnecessary long-term toxicity.

GCT-02 Ovarian germ cell tumours: More alike than different?

M. Lockley[1,2]
[1]Queen Mary University of London, London, UK; [2]University College Hospital, London, UK

Background: Germ cell tumours (GCTs) of the ovary account for less than 2% of all ovarian malignancies. These rare tumours differ markedly from the more common epithelial ovarian tumours that adult oncologists are accustomed to treating, most notably in their early age of onset and their excellent prognosis. As a result, survivorship issues and the avoidance of treatment-induced toxicity is of much greater importance for these young women.
Methods: Review of clinical trial data and comprehensive literature review.
Results: Ovarian GCTs are subdivided into pathological subtypes including dysgerminoma, yolk sac tumours and teratomas, which are further classified according to the amount of primitive neuroectodermal tissue. Historically, all have been treated with aggressive combination chemotherapy, usually BEP (bleomycin, etoposide and cisplatin). Despite the known chronic toxicities associated with this regimen, current international treatment guidelines continue to recommend this approach for all adult patients. In contrast, testicular seminomas (dysgerminoma equivalent) are now safely treated with single agent carboplatin, whilst JEB (carboplatin, etoposide, bleomycin) has largely replaced BEP in paediatric practice. Furthermore, IT is treated with surgery alone in male urological and paediatric practice, whilst adult ovarian guidelines still recommend BEP in nearly all cases. The Malignant Germ Cell International Consortium (MaGIC) has fostered a cross-disciplinary approach to these rare tumours and multiple recent publications show that these tumours share many biological, pathological and clinical features regardless of age and gender. This keynote lecture will focus on these new developments and their implications for the management of ovarian GCTs at all patient ages.

GCT-03 The Malignant Germ Cell International Consortium (MaGIC)

A. Lindsay Frazier[1], M. Krailo[2], J. Amatruda[3], M.J. Murray[4,5], L.F. Lopes[6], C. Faure-Conter[7], S. Stoneham[8], F. Pashankar[9], F. Shaikh[10], G. Chinnaswamy[11], Y. Xie[12], D. Gershenson[13], A. Covens[14], T. Olson[15], L. Klosterkemper[1], J. Nicholson[4], on behalf of the MaGIC investigators
[1]Department of Pediatric Oncology, Dana-Farber/Boston Children's Cancer and Blood Disorders Center, Boston, USA; [2]Department of Preventive Medicine, University of Southern California, Los Angeles, USA; [3]Departments of Pediatrics, Molecular Biology and Internal Medicine, University of Texas Southwestern Medical Center, Dallas, USA; [4]Department of Paediatric Haematology and Oncology, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK; [5]Department of Pathology, University of Cambridge, UK; [6]Department of Pediatric Oncology, Barretos Children's Cancer Hospital, São Paulo, Brazil; [7]Department of Pediatric Oncology, Institut d'Hemato-oncologie Pediatrique-Centre Leon Berard, Lyon, France; [8]Department of Paediatric Haematology and Oncology, University College London Hospital Trusts, London, UK; [9]Department of Pediatrics, Yale University School of Medicine, New Haven, USA; [10]Division of Hematology Oncology, The Hospital for Sick Children, University of Toronto. Toronto, Canada; [11]Department of Paediatric Oncology, Tata Memorial Centre, Mumbai, India; [12]University of Texas Southwestern Medical Center, Dallas, USA; [13]Department of Gynecologic Oncology and Reproductive Medicine, MD Anderson Cancer Center, Houston, TX; [14]Department of Obstetrics and Gynaecology, University of Toronto. Toronto, Canada; [15]Department of Pediatrics, Children's Healthcare of Atlanta, Atlanta, USA

Background: Many important questions remain about refined prognostic markers, reductions in therapy, avoidance of long-term toxicities, and explanations for the epidemiology of germ cell tumours (GCT). As a disease that occurs primarily in adolescents and young adults, a specific challenge has been a fragmented approach dependent on provider speciality (medical, gynaecological, and paediatric oncology). This siloed approach to treatment has inhibited research and clinical trial design and execution.
Methods: To bridge this clinical divide, the Malignant Germ Cell International Consortium (MaGIC) was founded with investigators from Children's Oncology Group (COG-North America), Children's Cancer and Leukaemia Group (CCLG-United Kingdom), Gynecologic Oncology Group (GOG-United States), Medical Research Council (MRC-UK), Brazil, and France. Each group has contributed completed national clinical trials data to establish a common database for clinical and translational research.
Results: MaGIC has grown to include investigators from ten different countries with a wide range of expertise. Governance of the consortium has been established with a set of standard operating procedures and committee structure. The MaGIC dataset of 3,500 patients has been used to produce revised risk stratification that has served as the basis for three international clinical trials currently underway. The clinical data has been harmonized across trials into MaGIC 'data commons', a federated database that will also include links to biospecimens and genomic results. MaGIC investigators have published 26 manuscripts to date. Investigators with MaGIC have also been instrumental in the development of a new universal serum microRNA biomarker.