

INSULIN-RESISTANCE AND ABNORMAL GLUCOSE TOLERANCE AFTER PAEDIATRIC HEMATOPOIETIC STEM CELL TRANSPLANTATION IN BLOOD-CANCER SURVIVORS

Sara Ciccone^{1,2}, Carla Bizzarri¹, Rita Maria Pinto³, Letizia Pomponia Brescia³, Franco Locatelli^{3,4}, Marco Cappa¹

¹Endocrinology and Diabetes Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy

²Unit of Pediatrics, S. Anna University Hospital, Ferrara, Italy

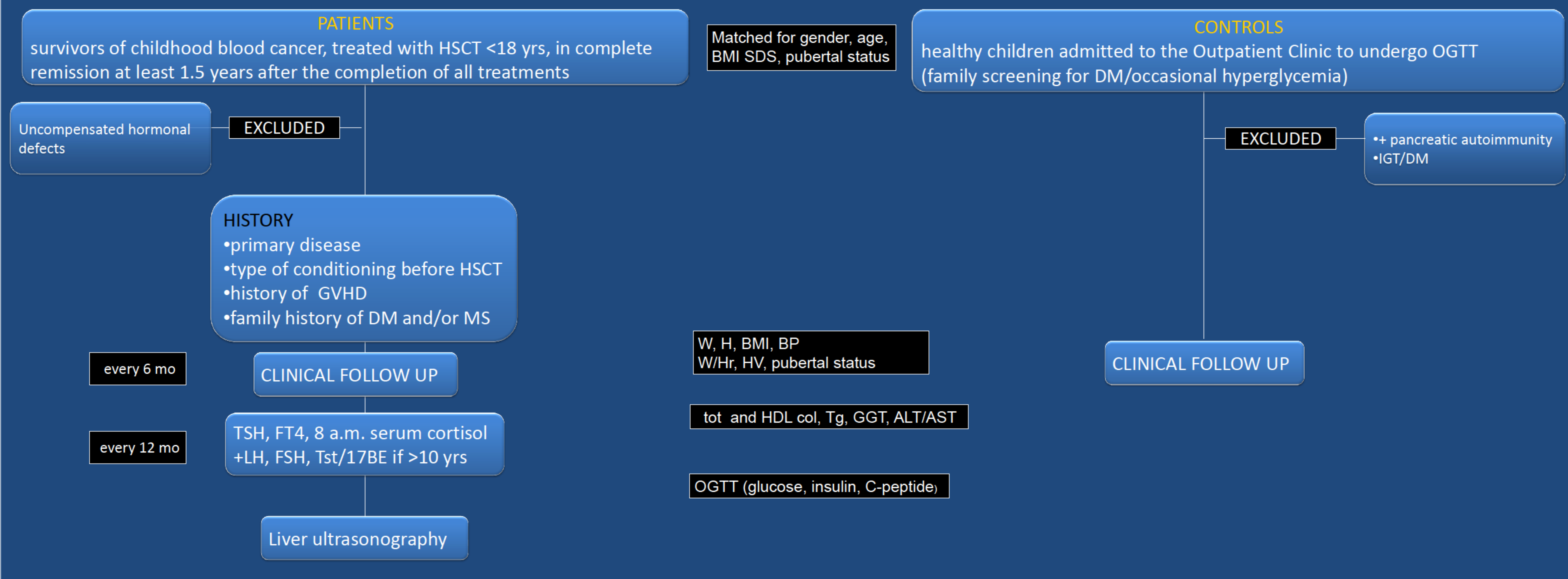
³Department of Pediatric Hematology and Oncology, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy

⁴Department of Pediatric Science, University of Pavia, Pavia, Italy

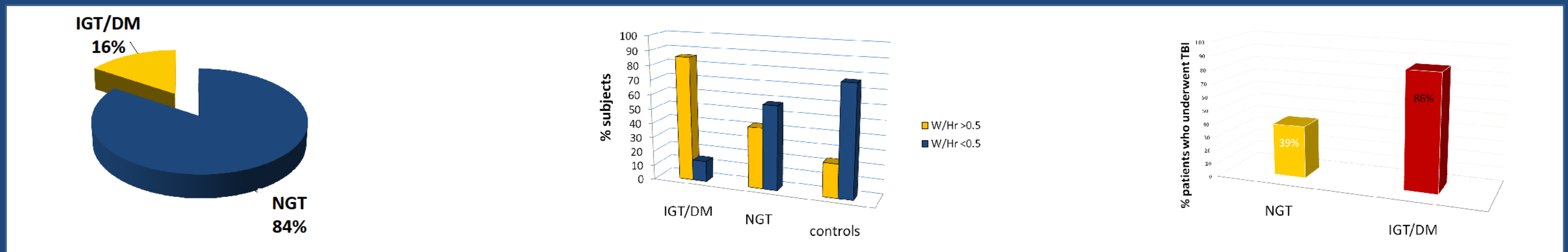
BACKGROUND Patients who had undergone hematopoietic stem cell transplantation (HSCT) during childhood have been reported to have a higher risk of early metabolic syndrome (MS) and diabetes mellitus (DM) with a consequent increased risk of cardiovascular disease.

OBJECTIVE AND HYPOTHESES Assess the prevalence and potential risk factors for MS and IGT/DM in young patients who underwent pediatric HSCT.

METHOD Prospective, descriptive, cross-sectional study conducted between November 1, 2012 and July 31, 2014



RESULTS 7/45 patients (15.5%) showed IGT or DM, 1/45 (2.2%) was obese and none fulfilled the criteria for MS. Abdominal adiposity (waist/height ratio >0.5) was more common in IGT/DM patients, in comparison with both normal glucose tolerance patients (NGT) and controls. Analysis of insulin resistance/sensitivity indexes suggested an insulin-resistant state in HSCT survivors (both NGT and IGT/DM patients) compared to controls. In IGT/DM patients, the use of total body irradiation (TBI) during the conditioning regimen was significantly more common, and the time elapsed from HSCT was significantly longer than in NGT patients.



CONCLUSIONS Blood-cancer survivors treated with HSCT may develop insulin resistance early after transplantation, showing redistribution of fat tissue with central fat accumulation despite a normal BMI. The main factors associated with increased metabolic risk are **TBI** and time from **HSCT**. Evaluation of MS and glucose tolerance should be part of hormonal follow up, which should be routinely proposed to these patients in order to prevent cardiovascular disorders.