

ABSTRACT

Background: Oral health has a profound effect on the quality of life of individuals in general and patients undergoing Hematopoietic Stem Cell Transplantation (HSCT) in particular. As more children survive for longer periods following HSCT, clinical studies on late oral adverse effects experienced are becoming more important for addressing current oral health problems and for determining the need for applying effective preventive measures.

Aims of the study: The aim of this study is to investigate the late oral complications developing in pediatric patients following HSCT in Jordan.

Methods: The dental and medical records of 167 patients who received HSCT at King Hussein Cancer Center in Jordan between the years 2003 and 2010 were retrospectively reviewed and relevant data were extracted and analyzed.

Results: The median age of patients at HSCT was 8.4 years, 91 patients were males (54.5%) and 86 patients had primary malignant diseases (51.5%). Chronic graft versus host disease (cGVHD) was diagnosed in 41 patients out of 137 patients who received allogeneic HSCT (29.9%). The age of the patient, gender, type of the primary disease, source of stem cells, and treatment with total body irradiation (TBI) were found as significant risk factors for the development of cGVHD. Oral cGVHD was diagnosed in 21 patients who developed cGVHD (51.2%), and isolated oral involvement was found in 3 patients (7.3%). Pre- and post- HSCT dental records of 79 patients were available to be investigated. A reduction in the number of patients with sound dentition was noticed after receiving HSCT but not to a statistically significant level. Less than half of the patients received fluoride application before and after undergoing HSCT with no special precautions in patients receiving radiotherapy. Four patients reported dental hypersensitivity after more than 8 months following HSCT (5%). Only one patient missed more than one appointment before receiving HSCT while 46 patients missed more than an appointment after receiving HSCT (58.2%). Forty six patients needed dental treatment before receiving HSCT (58.2%).

Conclusions: Children undergoing HSCT represent a high risk group to develop oral and dental complications and should receive special attention by the caregivers including dental health care professionals. Close monitoring of risk factors and using effective prophylactic and proper management measures for cGVHD are crucial following allogeneic HSCT. Prospective clinical studies are needed to analyze the wide spectrum of oral and dental complications following pediatric HSCT in our region.

Concise Abstract:

Hematopoietic Stem Cell Transplantation (HSCT) may result in various oral adverse effects that need special management and preventive measures. To investigate the development of late oral complications, the dental and medical records of 167 pediatric patients who received HSCT at King Hussein Cancer Center in Jordan were retrospectively reviewed. Chronic graft versus host disease (cGVHD) was diagnosed in 41 patients out of 137 patients who received allogeneic HSCT (29.9%). The age of the patient, gender, type of the primary disease, source of stem cells, and treatment with total body irradiation were found as significant risk factors for cGVHD development. Oral cGVHD was diagnosed in 21 patients who developed cGVHD (51.2%), and isolated oral involvement was found in 3 patients (7.3%). Pre- and post- HSCT dental records of 79 patients were available to be investigated. A tendency towards a reduction in the number of patients with sound dentition was noticed in patients after receiving HSCT. Four patients reported dental hypersensitivity after more than 8 months following HSCT (5%). Children receiving HSCT represent a high risk group for developing oral complications and require special monitoring. Future studies are required to investigate the oral complications in children receiving HSCT in Jordan.