215 IN THEIR OWN WORDS: AN EXAMINATION OF THE EXPERIENCE OF SEXUALITY IN INDIVIDUALS WHO HAVE UNDERGONE HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Objective: The primary objective of this study was to identify patients’ experience of sexuality following autologous or allogeneic hematopoietic stem cell transplantation (HSCT).

Methods: This study utilized a concurrent, mixed qualitative-quantitative design. Participants completed the Functional Assessment of Chronic Illness Therapy-BMT (FACT-BMT) as well as underwent content semi-structured interviews.

Results: Eleven individuals participated in the study. The mean age at time of transplant was 43 years (range: 17-62) and mean number of months from transplant to time of study participation was 29 (range: 2-86). Participants scored relatively high on the FACT-BMT (mean 106 [range: 56-134] out of a possible 148), where higher scores indicate better quality of life. Despite the high FACT-BMT scores, the majority of participants indicated some level of dissatisfaction with his/her sex life. Regarding sexual function, the most common changes experienced by the participants were: decreased libido (67% of female participants; 65% of male participants), difficulties with erectile function (88% of male participants), dyspareunia (67% of female participants), vaginal dryness (100% of female participants) and not feeling desirable (33% of female participants; 38% of male participants). Analysis of the qualitative data obtained from the interviews revealed several themes pertaining to sexuality and HSCT including: changes in sexual function, the impact of the disease/treatment on the participant’s relationship, the experience of discussing sexuality with health care providers, and recommendations for potential strategies that may make it easier for patients to discuss sexuality with health care providers. Interview responses provided context for the participants’ FACT-BMT scores and perspectives on each individual’s experience with sexuality throughout the illness and treatment trajectory.

Conclusions: In this study, 100% of participants experienced changes in sexuality following HSCT. While many participants encountered changes in sexual function, the interview component of this study revealed that sexuality, as a broader concept, went beyond changes in sexuality following HSCT. While many participants expressed difficulty in discussing sexuality with health care providers, several mentioned that they felt better able to discuss the impact of their illness on their sex life. Interviews revealed several themes pertaining to sexuality and HSCT including: changes in sexual function, the impact of the disease/treatment on the participant’s relationship, the experience of discussing sexuality with health care providers, and recommendations for potential strategies that may make it easier for patients to discuss sexuality with health care providers.

216 IMPLEMENTATION OF A POPULATION CARE MODEL UTILIZING THE ELECTRONIC MEDICAL RECORD TO SCREEN AND MANAGE LATE EFFECTS OF HEMATOPOIETIC STEM CELL TRANSPLANT IS AN EFFECTIVE WAY TO ENSURE GOOD INTERMEDIATE HEALTH OUTCOMES AND COST EFFICIENT CLINICAL PROCESSES

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Background: Despite best efforts to reduce the toxicity of conditioning regimens, the development of hematopoietic stem cell transplant (HSCT) related late effects remains inevitable. Recent studies report up to 90% incidence of at least one chronic condition with close to 25% being severe. Consistent screening efforts are key to the early diagnosis and appropriate management of these chronic conditions. We share our experience using an electronic medical record (EMR) system to track pediatric HSCT survivors in a healthcare system that spans 12 medical centers over a large geographic area.

Hypothesis: Utilizing a population care approach to screen and manage late effects of HSCT ensures good intermediate health outcomes (eg handling of test results) and efficient clinical processes (eg test frequency).

Methods: The EMR charts of 86 pediatric (0-18yrs) HSCT survivors over the last 4 years were reviewed for compliance with American Society for Blood and Marrow Transplantation and Children’s Oncology Group survivorship guidelines.

Results: The majority of patients surveyed had timely screening and appropriate management of visual, endocrine, cardiac, and pulmonary HSCT late effects concordant with published guidelines. Concordance was higher within the last two years once a centralized, designated team was formed comprised of a lead physician and nurse case managers who were fluent in the EMR.

Conclusions: An EMR based, population care approach is a good model for small to medium sized HSCT program to consistently track and manage pediatric HSCT survivors. It may be especially suited for healthcare systems that cover small numbers dispersed over large geographic areas where centralized case management can promote concordance with published survivorship guidelines.

217 CONTRIBUTION OF GRAFT-VERSUS-HOST DISEASE TO ANDROGEN DEFICIENCY IN WOMEN AFTER ALLOGENEIC STEM CELL TRANSPLANTATION

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Background: After allo-HCT, ovarian failure and chronic GvHD contribute to sexual dysfunction and reduced quality of life (QoL) in women. We hypothesized that androgen hormone production, both in ovaries and adrenal cortex, also might be impaired after allografting.

Patients: Twenty-four women in complete remission, 54 (3-149) months after allo-HCT for hematological malignancies. Conditioning therapy was myeloablative or reduced in 11 and 13 pts, respectively. Glucocorticoid treatment was ongoing in 11 pts, 10 of whom because of chronic GvHD (cGvHD). Nine pts were on systemic hormone replacement therapy (HRT). Controls were 26 healthy age matched women, 3 on HRT. The HCT group and controls were similar with respect to age (mean 49 vs 50 yrs, NS), weight (70 vs 67 kg, NS), S-albumin (mean 40 vs 41 g/L, NS), and in S-SEBG (mean 72 vs 78 nM, NS).

Methods: Total serum testosterone was determined using a modified RIA with a sensitivity of 0.03 nM, and the biologically active free testosterone was calculated using S-albumin and serum S-SEBG. Wilcoxon’s rank-sum test was used for comparisons.

Results: Compared to findings in the control group, free testosterone and dehydroepiandrosterone sulfate (DHEAS) was significantly lower in HCT pts (5.1 vs 7.9 pM, p = 0.0008) and 1.3 vs 2.5 uM (p = 0.0009), respectively. In HCT patients with cGvHD, median free testosterone level was 2.1 compared to 4.1 pM in patients without cGvHD, p = 0.046. The corresponding levels for DHEAS were 0.25 and 1.45 uM (p = 0.009). There was a tendency to lower estradiol levels in HCT pts (mean 61 vs 206 pM, p = 0.09). S-LH and S-FSH were significantly higher in HCT pts (39 vs 19 U/L p = 0.0001, and 59 vs 33 U/L, p = 0.005, respectively). Within the HCT group, there were no significant differences in free testosterone and DHEAS levels with respect to weight, previous acute GvHD, conditioning intensity or ongoing HRT.

Conclusions: Our findings of low testosterone and DHEAS suggest that not only ovarian dysfunction, but also a reduced adrenal steroid production contributes to low androgen levels. The androgen deficiency observed, possibly related to cGvHD and corticoid steroid treatment, could be an additional cause of impaired vitality and sexual dysfunction reported after allo-HCT.

218 FERTILITY PRESERVATION IN PEDIATRIC PATIENTS UNDERGOING STEM CELL TRANSPLANTATION: SPERM BANKING BEFORE OR AFTER CHEMOTHERAPY

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Purpose: As survival rates among stem cell transplant (SCT) patients continue to improve, the long-term consequences of
aggressive chemotherapy and radiotherapy on future fertility are being increasingly realized in males. To counteract such deleterious effects, we initiated a formal fertility preservation program in 2007 to increase access to sperm cryopreservation (SCP) services at our institution. Here we analyze our program’s utility and patient data to provide insight into fertility preservation prior to SCT.

Methods: An IRB-approved chart review was conducted on all male pediatric patients older than 13 years who underwent SCT between January 2008 and June 2010 at our institution. Patients given a fertility preservation consult were identified, and the semen parameters of those subsequently banking sperm were obtained.

Results: During the study interval, 22 male pediatric patients met our study criteria, of which there were 19 allogeneic-transplants and 3 auto-transplants. 8/22 (36%) patients were given fertility preservation consults and 6/22 (27%) proceeded to SCP, a consult success rate of 75% (Table I). 6/13 (38%) patients with planned radiotherapy were consulted, compared to 2/9 (22%) patients with no planned radiotherapy. Of the 6 patients banking sperm, 3 banked prior to chemotherapy while 3 banked after. The average semen parameters of patients banking before chemo vs after chemotherapy were as follows: Volume 2.50 vs 1.50 ml; Concentration 30.7 vs 30.6 million/ml; Motility 36.7% vs 21.3%; Normal Morphology 9.7% vs 3.5%. Thus, while patients who banked after chemotherapy had sub-fertile semen parameters, their bulk semen parameters were still adequate for cryopreservation. All bulk semen parameters tended to improve as age at banking increased.

Conclusions: The high fertility preservation consult success rate indicates a large desire to preserve fertility in patients planning SCT. While bulk semen parameters were adequate for cryopreservation in patients after treatment, DNA damage resulting from chemotheraphy was not assessed. Although cryopreservation of some sperm is preferred over none, ample literature supports the notion that chemotherapy has a deleterious effect on fertilization and embryo development outcomes. Thus, every effort should be made to cryopreserve sperm prior to chemotherapy and radiation. Finally, future initiatives are required to extend the opportunity of fertility preservation to all SCT patients.

Table 1. Demographic Comparison of All SCT Patients vs. Consulted Patients

<table>
<thead>
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<th>Year</th>
<th>All Patients (N = 22)</th>
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</tr>
<tr>
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<td>2010</td>
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</tr>
<tr>
<td>Transplant Type</td>
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<td>Hispanic</td>
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<td>2</td>
</tr>
<tr>
<td>Other</td>
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</tr>
</tbody>
</table>

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Repeat readmissions after Allogeneic hematopoietic progenitor cell transplantation (HPCT)

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Hospital readmissions increase healthcare cost and are a target of ways to improve cost and quality of medical care. Patients (pts) who undergo allogeneic hematopoietic progenitor cell transplant require a high level of care and are often readmitted. Thirty-day hospital readmissions following allogeneic HPCT, however, are associated with poor survival. In this retrospective review, we evaluated our 30-day readmissions for allogeneic HPCT occurring in 2010 at our institution. The analysis included pts who were not only transplanted in 2010 but also those who had been previously transplanted (ranging from 1994-2010), and later hospitalized again in 2010 and subsequently readmitted within 30 days. There were 83 total readmissions for allogeneic transplant pts within 30 days of a prior hospitalization in 2010. Only 47 pts, however, accounted for these readmissions and 19 (25%) pts were admitted multiple times (range 2-5 times), accounting for 55 (66%) of the readmissions. Initial diagnoses for pts admitted more than once included: 7 refractory NHL, 4 AML, 3 ALL, 2 MDS, 2 AA and 1 CML. Donor type included 4 UC, 5 MUD and 10 MSD. Fifty-two percent (n = 10) had a CIBMTR transplant co-morbidity index score of >2. Fifty-three (64%) of the 30d readmissions after allogeneic HPCT were due to infection or unexplained fever, followed by 9 (11%) for symptoms related to GVHD, 7 (8%) due to cardiac complications (CHF, arrhythmias), and 14 (17%) others related to symptom management (pain, nausea/vomiting, diarrhea not related to infection or GVHD). Looking specifically at reasons for subsequent repeated readmissions demonstrated a similar distribution with the majority of re-hospitalizations being for infection or unexplained fever, followed by symptom management, cardiac complications, and GVHD. There were 13 deaths, all related to infection or complications from GVHD. Median time to death after readmission was 27 days (range, 0 to 96).

Readmissions for allogeneic HPCT are associated with worse survival. In this retrospective review we have found that the majority of readmissions were from pts admitted multiple times. About half of these pts were identified as having higher co-morbidity index scores. Further prospective studies of readmission trends in allogeneic transplant and identification of high risk pts who may be susceptible to multiple readmissions may help decrease readmission rates, transplant outcomes, and improve overall quality of care.

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Venuos thromboembolism in allogeneic hematopoietic stem cell transplantation – The incidence, characteristics and management – A single institution experience

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Background: The association between venous thromboembolism (VTE) and hematologic malignancy is well established. However, VTE after allogeneic hematopoietic cell transplantation (HCT) is not well characterized. The management is not standardized and varies between hematologists.

Methods: A total of 260 patients underwent allogeneic HCT at the University of Iowa between 2004 and 2009. Patient’s data were retrospectively abstracted from the electronic medical record and bone marrow transplant database. We report the incidence, characteristics, management and outcome of VTE following allogeneic transplant.

Results: Of 260 patients who underwent allogeneic HCT, 35 (13.7%) developed VTE events. The median time from transplant to VTE diagnosis was 121 days (3 to 1833 d). Twenty-two patients (63%) developed VTE during the first six months post allogeneic transplant. Sixteen patients (47%) had central venous catheter related VTE. At VTE diagnosis, six patients (17%) had active hematologic malignancy and 18 patients (51%) had active GVHD (≥ grade III). The median platelet count at VTE diagnosis was 65 (5-767) x 10^9/μm³. Twenty-five patients (71%) received systemic anticoagulation (17 heparin products VS 8 heparin followed by warfarin). Eight of 25 patients (32%) who had anticoagulation treatment received therapeutic dose of anticoagulant whereas 17 patients had prophylactic dose. Among 10 patients who did not receive systemic anticoagulation treatment either due to clinical active bleeding or severe thrombocytoemia, two underwent inferior vena cava filter placement. Eight patients (32%) had hemorrhagic complications during anticoagulation. The median anticoagulation...