were 13.6 ng/ml (range: 4.9-26.7 ng/ml) and 100% of the patients were in the insufficiency range levels (<30 ng/ml). Median PTHi levels were 62.6 pg/ml (range: 24.4-23.7 pg/ml), and 46% of the patients had secondary hyperparathyroidism. In the postHCT group, median 25-OH vitamin D levels were 11.4 ng/ml (range: 4.9-23.4 ng/ml) and 100% had insufficiency levels. Median PTHi levels were 68 pg/ml (range: 37.4-135.8 pg/ml), and 56% of the patients had secondary hyperparathyroidism. 12 patients had DXA before HCT and 3 (25%) of them had DXA lumbar Z score less than -2.0. In 19 patients postHCT, 4 (21%) had decreased DXA Z score < 2.0. No difference could be established between autologous or allogeneic HCT in any measurement. Only the presence of chronic graft vs host disease (GVHD) was associated with higher PTH levels by ANOVA test. None of the other variables were associated with acute or chronic GVHD.

**Conclusions:** HCT patients represent a high-risk group of developing severe vitamin D deficiency, secondary hyperparathyroidism and decreased DXA levels. These data are a warning that this population of patients requires early intervention to prevent long-term complications. This report is the initial evaluation for the development and treatment of bone health in a prospective matter in HCT patients in our center.

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**Donor Cell Leukemia: A Prospective Study of Its Identification and Treatment**

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Leukemia relapses occurring in donor cells, so-called donor cell leukemias (DCL) after allogeneic hematopoietic stem cell transplantation have been reported in several cases and still are considered as rare diseases. Cytogenetic analysis, flow cytometry and molecular testing have been used to confirm this event in the cases so far reported. The incidence of this condition is largely unknown, as well as the results of its treatment. We have prospectively searched for DCL in a 12-year period, in a single institution. In a group of 106 consecutive patients allografted because of leukemia we have identified 7 cases of DCL; six of them were allografted because of relapsed acute lymphoblastic leukemia (ALL) and one because of paroxysmal nocturnal hemoglobinuria/aplastic anemia; these figures suggest that the real incidence of DCL has been underestimated in previous studies. All the patients were allografted from HLA-identical siblings, employing a reduced-intensity conditioning regimen. The cases appeared with median of 10 months after the allograft; the number of blast cells when the leukemic activity ensued was above 50% in all cases, whereas the chimerism studies revealed more than 90% cells of donor origin. The origin of the leukemias cells was shown by microsatellites and with sex mismatch. Six patients with lymphoblastic DCL were treated prospectively with a pediatric-inspired combined chemotherapy schedule designed for “de novo” ALL patients. A complete response was obtained in 3/6 patients with lymphoblastic DCL, these patients being alive in a complete remission at 11,12 and 98 months after the diagnosis of DCL. The long-term DCL survivors remain full chimeras and did not need a second transplant. It is concluded that the prevalence of DCL may be higher if it is prospectively looked for, and that acceptable therapeutic results are obtained if patients are treated as “do novo” leukemias employing combined chemotherapy.

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**Health-Related Quality of Life in Survivors of Allogeneic Hematopoietic Stem Cell Transplantation Employing the Mexican Reduced-Intensity Conditioning**

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**Background:** Quality of life (QOL) is an important consideration in the counseling, implementation, and post-treatment management of arduous treatments for life-threatening conditions, such as allogeneic hematopoietic cell transplantation (allo-HCT).

**Material and Methods:** QOL was analyzed in leukemia patients who underwent allo-HCT using reduced intensity conditioning (RIC) on an outpatient basis at either the Centro de Hematologia y Medicina Interna de Puebla of the Clinica Ruiz or the Hematology Service of the Internal Medicine Department of the Hospital “Dr. José Eleuterio González” of the Universidad Autónoma de Nuevo León, who had survived above 12 months after the allograft, who could be approached, who were in a completed continuous remission-with or without graft versus host disease and who were willing to respond to the questionnaire. Thirty-five patients fulfilling these requirements were included, and a sex and age-matched group of 35 reference subjects was also studied.

**Results:** Allografted patients were found to have a slightly better mental component summary than the reference subjects (53.23 versus 48.66 points, p = 0.01), whereas the physical component summary did not show a difference (54.53 versus 52.05 points, p = 0.59). Most of the differences between allografted individuals and reference subjects controls were not significant.

**Conclusions:** These data suggest that allografted individuals employing our RIC regimen, enjoy a health-related quality of life similar to that of reference subjects, adding, another advantage of this method of conducting stem cell allografting. However, more work needs to be done to elucidate the impact of RIC on QOL post-allo-HCT.

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**Increased Incidence of Fatigue in Pediatric Hematopoietic Stem Cell Transplant Recipients**

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Background: Fatigue is a common side effect of chemotherapy, but is poorly studied in pediatric HSCT recipients. Hope, or goal-directedness, may be impacted by fatigue. The incidence and severity of fatigue and its impact on hope warrants investigation.

Patients and Methods: Patients were eligible for enrollment in this prospective study if they were between the ages of 5–18 years. Patients unable to read English or otherwise unable to complete the survey were ineligible. Subjects completed the PedsQL Multidimensional Fatigue Scales (Fatigue QOL) and Children’s Hope Scale. Subjects were enrolled during a regular follow-up clinic visit and completed the survey. The results of the fatigue surveys were then compared to healthy subjects and oncology patients in a validated sample as reported by Varni et al. (Cancer, 2002; 94:2090-2106).

Results: A total of 25 subjects who had HSCT were enrolled, at a mean of 12 yrs. (range of 6-19 yrs). 2 had received autologous HSCT, 23 had received allogeneic HSCT, and 1 patient received an autologous HSCT. 6 had GVHD at the time of survey completion. HSCT recipients had an average Total Fatigue QOL score of 69.9 (range 38.9-95.8) and 18/25 (72%) had a lower score than the average for healthy subjects. HSCT recipients had a statistically significant lower average total Fatigue QOL score (69.9 vs. 80.5, p = 0.002) and average General Fatigue QOL score (71.3 vs. 85.3, p = 0.002), and a trend to a lower average Sleep Fatigue QOL score (62.65 vs. 75, p = 0.002), when compared with healthy subjects. There was no statistically significant difference in average Cognitive Fatigue QOL scores (73.98 vs. 81.14, p = 0.63). There was no statistically significant difference in average Fatigue QOL scores in SCT recipients when compared to patients undergoing chemotherapy. Proxy reports of fatigue were higher than comparative populations. An analysis of factors failed to show any significant impact on fatigue including age, days post transplant, sex, TBI received, GVHD, mental illness, ICU admission, and malnutrition-impacted fatigue or hope. The average hope score was 0.76 (range 0.46-1), which corresponds to feeling hopeful “a lot of the time.” There was a direct correlation between Total Fatigue QOL and hope scores (r=0.472, p=0.02).

Conclusions: Fatigue is more prominent in pediatric HSCT recipients than a control population. Fatigue is related to hope. Fatigue experienced by HSCT recipients was similar to that seen in children receiving chemotherapy. Proxy reports of fatigue were much greater than those reported by both the subject and compared to healthy and oncology proxy reports. Larger prospective studies are needed to determine risk factors for fatigue and to develop interventions to alleviate fatigue in pediatric HSCT recipients.


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A Multidisciplinary Care Team Perspective on Children’s Emotional Experience in Isolation for Stem Cell Transplantation

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Background: Children’s experience of stem cell transplantation (SCT) is often marked with psychological distress and poor quality of life. While coping with the exigencies of life-threatening illness and treatment, children must also deal with being confined to a hospital isolation room for one to several months. We hypothesized that there are numerous evident stressors associated with being confined to an isolation room while undergoing SCT that may contribute to heightened anxiety and general psychological distress.

Methods: We aimed to identify stressors of pediatric SCT isolation by interviewing members of a multidisciplinary pediatric SCT care team. 33 participants represented all professional roles within the team, including physicians, nurses, psychologists, social workers, child life specialists, chaplains, school teachers, dieticians, occupational therapists, housekeepers and clinical researchers. 20 semi-structured interviews of 30-60 minutes each were conducted with members of the same profession. The 11 interview questions pertained to the isolation room, daily life in isolation, and distressing moments, among others topics. Four researchers then performed an inductive thematic analysis, developing a list of 13 codes, individualizing coding interview excerpts, analyzing code application frequencies and co-occurrences across professional groups, and summarizing findings into themes.

Results: 4 main themes were identified: Lack of Control Over their life in the Hospital, Missing Out on the Rest of the World, Changes in Social Relationships, and Disengagement from Daily Life Activities. The most frequently applied codes were also those with the highest co-occurrence—Connectedness, Family Involvement, Social Interaction, Control and Motivation.

Conclusion: From the collective perspective of a particular pediatric SCT care team, children experience numerous interrelated stressors associated with physical isolation during SCT, as indicated by the 13 identified codes, and their frequencies and co-occurrences across professional groups. The four presented overarching themes can be targeted in efforts to minimize patient anxiety and psychological distress, potentially contributing to improved quality of life and emotional well-being during hospitalization. To achieve a more comprehensive understanding of patients’ emotional needs from their clinical environments, this study must be supplemented by patient and family perspectives of their emotional experiences in isolation for SCT.

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Metabolic Syndrome Occurs within the First Year after Hematopoietic Cell Transplant

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Background: Improved survival after allogeneic hematopoietic cell transplantation (allo-HCT) enables us to learn more about potential late complications after HCT, including metabolic syndrome (MS). This is the first study investigating the prevalence or development of metabolic syndrome within the first year post-HCT in adult myeloablative transplant recipients.