and mortality in patients undergoing SCT. Risk factors for acquisition, progression to lower respiratory tract infection (LRI), and the effect of antiviral therapy are unknown. **Methods:** Virology records were reviewed for cases of FLU infection from day of transplant until 120 days after SCT over the last 12 FLU seasons. **Results:** From 9/1/89 until 3/31/02, FLU was isolated from 62 of 4797 SCT recipients (1.3%); 44 were upper respiratory tract infections (URI) alone, while 18 developed LRI. In multivariate models that adjusted for FLU season, female gender and advanced underlying disease were associated with risk for FLU acquisition (Table). Among patients with FLU, LRI was more common among those with lymphocytes < 100 (Table) and earlier time of infection after transplant (median 36 days vs. 61 days, p=0.04). Interestingly, patients receiving steroids for graft vs. host disease at the time of diagnosis were less likely to develop LRI. Of the 51 cases that were initially diagnosed as URI, 17 were treated with antivirals and 34 received no treatment; 6 (18%) of untreated patients developed LRI, while 1/8 (13%) treated with rimantadine and 0/9 treated with neuraminidase inhibitors (NAI) developed LRI. FLU shedding was longer in patients treated with > 1 mg/kg steroids (mean 15 days vs. 9 days for those receiving < 1 mg/kg); NAI (but not rimantidine) decreased shedding after controlling for steroid use (P=0.08). FLU-associated death (mortality within 30 days of infection) occurred in 6/62 (9.7%); FLU-associated mortality in LRI cases was 28% (5/18). Multivariate analysis showed that FLU LRI was associated with 1-year mortality after adjusting for underlying disease, donor type, cell source, CMV serostatus, age at transplant, and year of SCT. **Conclusions:** FLU infection early after SCT is relatively uncommon; this may be due to an aggressive vaccination program. Overall, 29% of FLU infections developed lower tract involvement, which was more common earlier after transplant and in the presence of lymphocytopenia. While not a randomized trial (and sample size is small), our data suggests that early antiviral therapy (particularly with NAI) may prevent progression to pneumonia and decrease FLU shedding.

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ADOPTIVE TRANSFER OF HCMV PP65 - PEPTIDE LOADED DCS TO IMPROVE HCMV-SPECIFIC T CELL RECONSTITUTION FOLLOWING ALLOGENEIC STEM CELL TRANSPLANTATION

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Delayed HCMV-specific immunereconstitution following allogeneic stem cell transplantation (allo SCT) leads to increased incidence of HCMV disease. In HCMV-seropositive patients undergoing allo-SCT from a HCMV-seronegative donor it can take up to more than 18 months until HCMV-specific T-cell reconstitution. Dendritic cells (DCs) have been used in several vaccination trials to induce antitumor immunity in patients with malignancies. Thus, in this phase I/II study DCs pulsed with HCMV pp65 HLA-A2/A1 binding peptides were used to induce HCMV-specific immune responses in 9 HCMV-seropositive patients receiving a SCT from HCMV-seronegative/unrelated donors. All patients were lacking HCMV-specific T-cell responses at time of DC-vaccination and had a HCMV infection. Seven patients received > 4 weeks of antiviral chemotherapy. None of the patients suffered from HCMV disease at time of DC-vaccination. Reconstitution of HCMV-specific Immune-responses was assessed by intracellular IFN-g or tetrameric-complexes staining. HCMV infection was documented by qPCR and antigenemia assay. Peptide-pulsed DCs were injected subcutaneously between day 30 and day 60 post-transplant. The DC-vaccinations were well tolerated and none of the patients developed GvHD or autoimmune phenomena following DC-vaccination. Apart from one patient who died due to recurrence of his underlying malignancy all patients are alive and well a median of 8 months post-vaccination. Complete data are available on 5 patients. In 4 of these an increase in the number of HCMVpp65-specific T-cells was detected between 15 and 60 days post-vaccination. None of these 5 patients showed a reactivation of HCMV infection during a follow-up of > 6 months post-vaccination. In this study, we show for the first time that a vaccination with HCMV pp65-peptide pulsed donor-derived DCs can be safely applied after SCT. Comparative studies will have to show whether DC-vaccination enhances HCMV-specific immunereconstitution post-allografting.

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BRONCHOALVEOLAR LAVAGE (BAL) IN PATIENTS (PTS) WITH PULMONARY COMPLICATIONS UNDERGOING HEMATOPOIETIC PROGENITOR CELL TRANSPLANT (HPCT): A SINGLE CENTER EXPERIENCE

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Fiberoptic bronchoscopy with BAL is a clinically safe and useful diagnostic procedure in HPCT pts and is often used with pulmonary complications post transplant. We retrospectively reviewed our experience with BAL as a diagnostic tool in one hundred thirty-nine consecutive patients who underwent HPCT at our institution. From January 1, 2000 to December 31, 2001, 39 (28%) HPCT patients underwent a total of 62 BAL procedures. The median age was 48 years (range 22-64), 57% were male. Twenty-eight pts underwent an allogeneic HPCT and 9 pts had an autologous HPCT. Diseases which indicated HPCT included leukemia (n=18), NHL (n=10), MM (n=7), other (n=2). BAL fluid was analyzed by rapid viral antigen assay (Chemicon International) for RSV, adenovirus, influenza, and parainfluenza; and cytology, gram stain, silver stain for PCP and fungus, AFB stain, PCR for CMV, and bacterial, fungal and viral cultures. Indications for BAL were driven by radiographic findings of pulmonary infiltrates/nodules (74%) or respiratory symptoms (26%). No post-HPCT patient had pre-existing lung disease. All BAL procedures were well tolerated with no reported complications. In 32 (52%) of the BAL the following infections were identified: CMV (n=8), (4 by viral culture, 4 by PCR), Candida glabrata (n=7), bacterial infections (n=5), RSV (n=4), HHV6/HSV (n=5), fungal infections (n=2), and EBV (n=1). Thirty (48%) of the BAL procedures yielded no infectious pulmonary etiology. The final clinical diagnoses in this group included: idiopathic pneumonitis (n=10), diffuse pulmonary hemorrhage (n=6), bronchiolitis obliterans (n=5), recurrent malignancy (n=1), and no diagnoses (n=8). The diagnostic yield of the BAL for identifying a specific infectious pulmonary process was 52%. We conclude that BAL is a safe and useful diagnostic tool in HPCT patients with pulmonary complications.

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PULMONARY HYPERTENSION (PH) COMPLICATING ALLOGENEIC HEMAPOIETIC STEM CELL TRANSPLANT (HSCT) IN CHILDREN AND ADOLESCENTS

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Pulmonary disease is a frequent cause of morbidity and mortality following allogeneic HSCT. After observing several patients who developed difficulty with PH associated with non-infectious interstitial pneumonitis, we conducted a retrospective review of the incidence and effects of pulmonary hypertension in all patients who underwent allogeneic HSCT at our center between January 1994 and September 2002 (N=103). All echocardiograms, autopsies (N=23) and lung biopsies (N=31) done in these 103 patients were evaluated. ECHO's were routinely done pre-HSCT, at 3, 6, 12 and 24 months post-HSCT, and when cardiopulmonary problems occurred. PH was diagnosed when ECHO showed R ventricular pressure>40mm Hg, R ventricular dilation, and/or R ventricular hypertrophy. Histologic diagnosis of PH on autopsy or lung biopsy required finding intimal muscle proliferation in pulmonary arterioles. PH was detected post-HSCT in 20 of 103 patients (19%). Diagnosis was by ECHO in 16 cases, autopsy in 2 and lung biopsy in 2. Median age at HSCT in PH patients was 8y (range, 6m-24y). PH was first recognized at a median of 62 days post-HSCT (range, day 0 to +631). The HSCT indication in patients with PH was ALL (N=9), AML (4), CML (2), NHL (2),

Osteopetrosis (2), and Fanconi Anemia (1). The transplant donor was a matched sibling in 5 cases, a mismatched family member in 2 and unrelated in 13. In a Kaplan-Meier analysis, PH adversely impacted patient survival (S; p=0.02; 2 y S, 44%[PH] v.66%[Non-PH]). Eight of 20 patients with PH are longterm survivors of HSCT. Five of 8 patients (62%) with PH who survived had idiopathic interstitial pneumonitis (IIP) compared to 3 of 12 (25%) who died, a trend toward improved S of PH in patients with IIP (p=0.17). In a univariate analysis, development of PH was associated with advanced disease status (p=0.04) and presence of either lung infection or IIP (p=0.03). Patient age, donor type, stem cell product, GVH, CMV infection and sepsis were not associated with risk for PH. In conclusion, PH is a common and perhaps under recognized problem in allogeneic HSCT. PH may arise due to lung inflammation of infectious or non-infectious etiology and adversely impacts patient survival. Recognition of PH and treatment based on understanding its pathogenesis may improve HSCT outcomes.