or deleterious to survival, T- and B-cell reconstitution & clinical outcome after treatment for SCID & what biomarkers are predictive of these outcomes.

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Engraftment Syndrome Has Distinct Biology Compared with Graft Versus Host Disease

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Introduction: The biology of engraftment syndrome (ES) is poorly understood and the degree of overlap with GVHD is unclear.
Methods: To better understand ES, plasma cytokine profiles were evaluated in 52 consecutive pediatric allogeneic bone marrow transplant recipients prior to transplant, on the day of stem cell infusion and weekly until day+100. Patients were divided into three groups, those with isolated engraftment syndrome (n=4), acute graft versus host disease without prior ES (n=12) and with neither engraftment syndrome nor acute graft versus host disease (n=32). Cytokine values were expressed as mean fold increase from pre transplant values.
Results: Median age of recipients was 6.7 years (range 0.6-19.4). ES was observed a median of 12.5 days (range 11-15) after transplant, while aGVHD was diagnosed at median of 55 days (range 19-95 days) after transplant. MCP-1 and MIP1b were significantly elevated in patients with ES during the first two weeks, while remaining unchanged or reduced in either of the other 2 cohorts. Moreover, while various cytokines were found to be elevated in patients who developed aGVHD, the degree of elevation was significantly exaggerated in patients with isolated ES during 4 weeks post-transplant. (See table 1)
Conclusion: MCP-1 and MIP1b are elevated specifically in ES suggesting a separate biology from GVHD. In addition, the degree of elevation of pro-inflammatory cytokines is markedly greater in children with ES compared to those with GVHD.

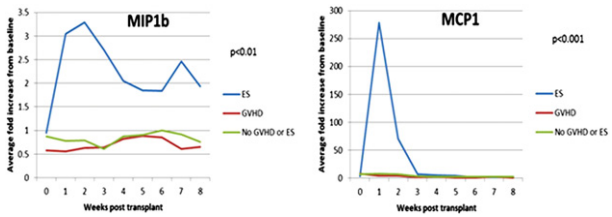

Figure 1. MIP1b and MCP1 in patients with ES, aGVHD and neither GVHD nor ES.

Table 1
Cytokine profiles in ES, aGVHD and patients with neither ES nor GVHD at 4 weeks after transplant

Cytokine	Neither ES nor GVHD (Mean fold increase from pre transplant value)	GVHD (Mean fold increase from pre transplant values)	ES (Mean fold increase from pre transplant values)	*P*-value (ES vs GVHD)
IL1b	0	2	36	<.01
IL4	2	5	40	<.001
IL7	8	6	138	<.01
IL12	14	4.6	108	<.01
IL13	2.8	3	62	<.01

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Stem Cell Transplantation and Long-Term Survival for Primary Immunodeficiencies: Outcomes Among the Donor Sources and Different Diagnostic Groups

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Matched related hemopoietic stem cell transplantation (MRD-HSCT) for patients with Primary Immunodeficiencies (PIDs) has been life saving. There is less information regarding stem cell transplantation from unrelated donors including umbilical cord blood units. We report the outcome following HSCT (1998-2012) in 69 patients with PIDs: SCID (n=35), WAS (n=9), Phagocytic disorders (CGD (n=17), LAD (n=4)); and other (n=4; one each; Interferon γ receptor deficiency, Hyper IgM syndrome, Autosomal recessive Hyper IgE syndrome (Dock 8 mutation), and reticular dysgenesis). The median age at transplant was 1 year (range, 0.1-17 years). Twenty patients received an MRD graft, 22 patients received a matched unrelated donor graft (MUD), 4 patients received a mismatched unrelated donor graft, 15 patients received a haploidentical related donor graft and 9 patients received a mismatched unrelated cord blood unit (MMUCB). One patient received a MMUCB after a haploidentical graft failure. 58 patients received ablative conditioning regimen with busulfan, cyclophosphamide, and fludarabine or cytarabine. Six patients received reduced intensity conditioning using fludarabine with anti-CD52 or/and anti-CD45. Six SCID patients were not conditioned. 52 patients received anti-CD52; no serotherapy was given for MMUCB grafts. Graft versus host disease (GvHD) prophylaxis combined cyclosporine and methotrexate or cyclosporine and prednisone except for MUCB recipients who were given cyclosporine and MMF as prophylaxis. Engraftment: Forty five of 67 evaluable patients (65%) achieved full donor chimerism (>90%) of all cell lineages including T cells. Twelve patients had primary graft failure. 10 were haploidentical grafts and 2 were MUD grafts. All except one were rescued with a repeat stem cell infusion. Just 3/67 patients developed grade II-IV aGvHD and no patient developed chronic GvHD. Survival. With a median follow up of 4 years (range, 0.3-12 years), overall survival was: 95% and 86%, for phagocytic disorders and SCIDs respectively; and 77% and 75% for WAS and other diseases, respectively. Recipients of MRD and UCB had 100% survival: MUD graft recipients had an 88% survival, while recipients of mismatched unrelated or haploidentical related transplants, had 50% and 71% survival respectively. Infection was the commonest cause of death. Hence excellent overall survival for PID patients may be obtained after unrelated HSCT and results using matched related grafts and mismatched cord blood units are highly comparable.

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Clinical Profile and Outcomes of Patients With â Thalassemia Major and Hepatitis C Virus Infection Undergoing an Allogeneic Stem Cell Transplant

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