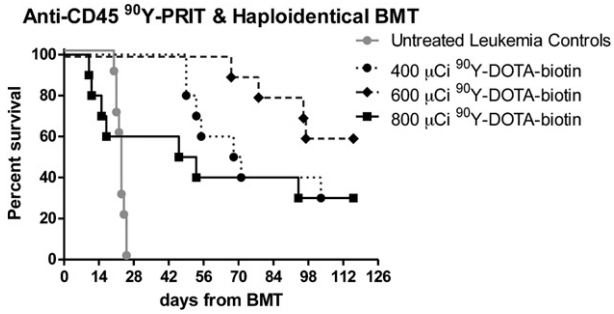
chemotherapy was HIDAC (1-3 grams/m2 for 6-8 doses)/ Etoposide(15-40mg/kg) in 16 patients and growth factor alone in one patient. Median time from diagnosis to ASCT was 4.2 (range 3.6-7) months. Preparative regimen for ASCT was Busulfan (3.2mg/kg x 4)/Etoposide (60 mg/kg) in 12 patients and high dose melphalan in 5 patients. The median CD34 cells infused was 4.9 x 10e6/kg (range 2.8 to 15.9).All patients engrafted with a median time to neutrophil engraftment of 11 (range10-12) days. The median time to platelet engraftment was 20 (range15-40) days. The median length of inpatient stay during the ASCT admission was 14 (range 10-25) days. One patient died of progressive disease 14 months post ASCT. Two patients died in remission on day 53 (sepsis) and day 836 (unknown cause) post ASCT. Fourteen patients (82%) are currently alive in complete remission. at a median follow-up of 20 (range 1- 40) months post ASCT. **Conclusion:** Consolidation of good risk AML patients with ASCT following induction of complete remission is safe and effective in preventing relapse in good risk AML patients.

232

Anti-CD45 Pretargeted Radioimmunotherapy Prior to Bone Marrow Transplantation without Total Body Irradiation Facilitates Engraftment From Haploidentical Donors and Prolongs Survival in a Disseminated Murine Leukemia Model

Johnnie J. Orozco [1,2], Aimee Kenoyer [1], Ethan Balkin [3], Donald K. Hamlin [3], Scott Wilbur [3], Darrell R. Fisher [4], Raya Mawad [1,2], Shani L. Frayo [1], Mark D. Hylarides [1], Damian J. Green [1,2], Ajay K. Gopal [1,2], Paul V. O'Donnell [5], Brenda M. Sandmaier [1,2], Oliver W. Press [1,2], John M. Pagel [1,2]. [1] Division of Clinical Research, Fred Hutchinson Cancer Research Center, Seattle, WA; [2] Department of Medicine, University of Washington, Seattle, WA; [3] Radiation Oncology, University of Washington, Seattle, WA; [4] Pacific Northwest National Laboratory, Richland, WA; [5] Data Abstraction Department - Clinical Research, Fred Hutchinson Cancer Research Center, Seattle, WA

In many cases the only curative treatment option for patients with advanced leukemias may be hematopoietic cell transplantation (HCT), which is often associated with toxicities. Despite HCT, patients still relapse while others will not have the option of HCT due to the unavailability of an HLA-matched donor. We aim to overcome these hurdles using anti-CD45 pretargeted radioimmunotherapy (PRIT) in lieu of total body irradiation (TBI) for haploidentical bone marrow transplantation (BMT). B6SJLF1/J mice were given 10^5 syngeneic myeloid leukemia cells followed by injection of anti-CD45 antibody (30F11; 140 μg) conjugated to streptavidin (SAv). Eight hours later a biotinylated synthetic clearing agent (CA) (50 μg) was injected, followed by ^{90}Y-labeled DOTA- (2 μg) 2 hours later. This strategy resulted in excellent localization of radioactivity in spleen [38.1 ± 7.3 percent of the injected dose of radioactivity per gram of organ (% ID/g)] and bone marrow (BM; 3.4 ± 1.1% ID/g), with minimal uptake in non-target organs (kidneys, 0.70 ± 0.13% ID/g; lungs, 0.3 ± 0.1% ID/g) 24 hours after radiobiotin injection. In separate BMT studies, mice were treated with and without fludarabine (FLU) (100 mg/kg/day) on days -8 to -4, and/or cyclophosphamide (CY; 200 mg/kg/day) on days -2 and +2, and 30F11-SAv (140 μg) followed by CA (50 μg) and 400-800 μCi of ^{90}Y-DOTA-biotin three days prior to infusion of 15x10^6 BM cells from haploidentical donor mice (CB6F1/J, H-2D^d). In mice transplanted without TBI but using 800 μCi of ^{90}Y-DOTA-biotin, day 28 flow cytometry analysis detected up to 12% donor CD8+ cells, with no reduction in levels of chimerism in the absence of FLU or CY. Subsequently, mice with disseminated syngeneic leukemia treated with the PRIT approach in the absence of FLU and TBI showed an improvement in median survival (OS) compared to untreated leukemic mice (see FIGURE). Mice treated with 400-800 μCi of ^{90}Y-DOTA-biotin had a median OS of at least 50 days compared to a median OS of 23 days in untreated control mice. Forty percent of mice given 800 μCi of ^{90}Y-DOTA-biotin died early from complications from BM aplasia. These results suggest that anti-CD45 PRIT can localize radiation effectively to BM and spleen, and when used in conjunction with haploidentical BMT without TBI or FLU, can facilitate engraftment and lead to improvements in OS in a disseminated murine leukemia model.



233

Allogeneic HSCT from Unrelated and Sibling Donors are Equal for Children with Acute Lymphoblastic Leukemia

Christina Peters [1], Andre Schrauder [2], Arend von Stackelberg [3], Martin Schrappe [2], Peter Bader [4], Brigitte Strahm [5], Wolfram Ebell [6], Rupert Handgretinger [7], Karl-Walter Sykora [8], Johanna Schrum [9], Bernhard Kremens [10], Susanne Matthes-Leodolter [11], Karoline Ehlert [12], Michael Albert [13], Roland Meisel [14], Tayfun Guengoer [15], Klaus Daniel Stachel [16], Wolfgang Holter [11], Bernd Gruhn [17], Ansgar Schulz [18], Ulrike Poetschger [19], Martin Zimmermann [20], Thomas E. Klingebiel [21]. [1] Stem Cell Transplantation Unit, St. Anna Children's Hospital, Vienna, Austria; [2] Department of Paediatrics, University Hospital Schleswig-Holstein, Kiel, Germany; [3] Charité, Berlin, Germany; [4] Pediatric Oncology, Klinik Fur Kinderheilkunde III, Frankfurt, Germany; [5] University Hospital, Freiburg, Germany; [6] Pediatric BMT Unit, University Hospital Charite-Virchow, Berlin, Germany; [7] Hematology/ Oncology, Children's University Hospital, Tuebingen, Germany; [8] University Hospital, Hannover, Germany; [9] University Hospital UKE, Hamburg, Germany; [10] University Hospital, Essen, Germany; [11] St. Anna Children's Hospital, Wien, Austria; [12] Pediatric Hematology and Oncology, University Children' Hospital, Muenster, Germany; [13] Pediatric Hematology/ Oncology, Dr. von Haunersches Kinderspital, Muenchen; [14] University Hospital, Duesseldorf, Germany; [15] Division of Immunology/Hematology/BMT, University Children's Hospital, Zürich, Switzerland; [16] Hem/Onc, Children`s Hospital, University of Erlangen, Erlangen, Germany; [17] University Hospital, Jena, Germany; [18] Universitatsklinikum Ulm Klinik fur Kinder, Ulm, Germany; [19] St. Anna Children's Cancer Research Institute, Wien, Austria; [20] Hannover Medical School, Hannover, Germany; [21] Zentrum Fuer Kinder Und Jugendmedizin, Frankfurt, Germany

Allogeneic hematopoietic stem-cell transplantation (HSCT) from HLA identical sibling donors is standard of care for children with high-risk acute lymphoblastic leukemia