

Umbilical Cord Blood Transplantation after Reduced-Intensity Conditioning for Elderly Patients with Hematologic Diseases

Naoyuki Uchida, Atsushi Wake, Shinsuke Takagi, Hisashi Yamamoto, Daisuke Kato, Yoshiko Matsuhashi, Tomoko Matsumura, Sachiko Seo, Naofumi Matsuno, Kazuhiro Masuoka, Eiji Kusumi, Koichiro Yuji, Shigesaburo Miyakoshi, Michio Matsuzaki, Akiko Yoneyama, Shuichi Taniguchi

Department of Hematology, Toranomon Hospital, Tokyo, Japan

Correspondence and reprint requests: Naoyuki Uchida, MD, 2-2-2 Toranomon, Minato-Ku, Tokyo 105-8470, Japan (e-mail: nuchida@toranomon.gr.jp).

Received October 13, 2007; accepted March 11, 2008

ABSTRACT

Although allogeneic hematopoietic stem cell transplantation is a potentially curative approach for advanced hematologic diseases, its application to elderly people is limited because of their comorbid physical conditions and lower chance of finding suitable related donors. Umbilical cord blood transplantation with reduced-intensity pretransplant conditioning (RI-UCBT) is 1 way to avoid these obstacles. We analyzed elderly patients aged 55 years and older with hematologic diseases who underwent RI-UCBT at our institute to assess feasibility and effectiveness of this treatment approach. Among the 70 patients included, 50 died, 74% of them from nonrelapse causes. Infection was the primary cause of death. Estimated overall survival and progression-free survival at 2 years were both 23%. In multivariate analyses, standard-risk diseases, age younger than 61 years, grade 0-II acute graft-versus-host disease, and the absence of preengraftment immune reaction were significantly associated with better overall survival. RI-UCBT is a potentially curative and applicable approach for elderly patients. Higher mortality, especially from nonrelapse causes, is the biggest problem to be solved to increase the feasibility of this approach.

© 2008 American Society for Blood and Marrow Transplantation

KEY WORDS

Cord blood transplantation • Reduced intensity • Elderly patients • Hematologic diseases

INTRODUCTION

Although morbidity associated with hematologic malignant diseases in elderly patients is higher than that in younger patients [1], elderly patients are less likely to be candidates for allogeneic stem cell transplantation, because of the fact that they are more likely to have comorbid organ conditions, either clinically or subclinically, which result in a higher rate of procedure-related mortality [2], and that they are less likely to have HLA-matched related donors available, as siblings also tend to be elderly.

The development of reduced-intensity conditioning (RIC) for transplants, which results in less toxicity and depends largely on graft-versus-tumor effects rather than high-dose therapy to eliminate malignant cells, has been shown to allow elderly patients to undergo allogeneic transplants [3-5]. The use of umbilical cord blood transplantation (UCBT) has been increasing because of the potential advantage of rapid availability and the lower risk of graft-versus-host disease (GVHD), thus permitting less stringent HLA matching [6,7]. The outcome of UCBT has been reported to be similar to unrelated bone marrow in the myeloablative setting [8-10]. UCBT with reduced-intensity pretransplant conditioning (RI-UCBT) for adults, mostly younger than 55 years old, has been increasingly reported, and has been shown to be applicable even in patients with a relatively low number of nucleated cells for their body weight [11-16]. However, little information has been available on whether elderly patients can tolerate slower engraftment, more infectious complications [17], and the unique preengraftment immune reaction (PIR) associated with UCBT [18,19]. PIR has been described by us and others [18,19], characterized by the symptoms induced possibly by hypercytokinemia, which sometimes cause severe organ damage and fatal outcome. We therefore retrospectively evaluated the use of the RI-UCBT in patients aged 55 and older by analyzing engraftment, nonrelapse mortality (NRM), GVHD, progression-free (PFS), and overall survival (OS) to address the feasibility and effectiveness of this method in older patients.

PATIENTS, MATERIALS, AND METHODS

Patients

This study included patients aged 55 and older who underwent RI-UCBT at our institute from July 18, 2002 through October 28, 2005. Patients were eligible for this study if they had any hematologic malignancies at high risk for relapse or severe aplastic anemia (AA) refractory to standard immunosuppressive therapy, as well as if they were unable to find suitable related or unrelated bone marrow (BM)/peripheral blood (PB) donors within reasonable time periods relative to their disease conditions. Patients with acute leukemia could be at first remission but at high risk for relapse because of adverse cytogenetic abnormalities, have a prior hematologic disorder, or be at any status beyond first remission. Patients with myelodysplastic syndrome (MDS) had to be refractory anemia with excess of blasts or chronic myelomonocytic leukemia, or have refractory anemia with transfusion dependency and/or severe neutropenia. Patients with chronic myeloid leukemia (CML) had to be beyond the first chronic phase. Lymphoma patients had to be beyond the first remission except those with acute or lymphoma type adult T cell leukemia. Patients who had end-stage organ dysfunction (DLco <30% predicted or LVEF <35%), or active serious infection at the time of transplantation were not eligible. All patients gave written informed consent, and the study was approved by the appropriate institutional review boards.

Donor Selection

UCB units were obtained from Japanese Cord Blood Bank Network. HLA-A and HLA-B antigens were identified by serologic typing. HLA-DRB1 alleles were determined by high-resolution molecular typing using polymerase chain reaction (PCR) sequence-specific primers. UCB grafts had at least 4 of 6 HLA-A, B antigens, and DRB1 alleles that were matched to the recipient and had a cryopreserved cell dose of at least 1.8×10^7 nucleated cells per kg of recipient body weight. The median total nucleated cell number and median CD34⁺ cell number were 2.8 (range: $1.8-5.2) \times 10^7$ /kg and $0.84 (0.11-3.28) \times 10^5$ /kg, respectively.

Patient Characteristics

Seventy consecutive patients were included in this study. Their characteristics are shown in Table 1.

Table 1. Patient and Donor Umbilical Cord Blood Characteristics

Sex Male 45 (64) Female 25 (36) Age (years) Median (range) 61 (55-79) Age distribution (years) 55 to 59 31 (44) 60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) 0 0 (9) Diagnosis 3 (4) 28 (40) MDS 3 (4) CML 4 (6) 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AAA 2 (3) 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (11) PCL 1 (1) PCL 1 (1) PCL 1 (1) AA 2 (3) 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes 59 (84) No 11 (16) 3 or greater 10 (14) 11 (16) 11 (16) 11 (16) 11 (16) 11 (16) 3 or greater 10 (14) 11 (16) 11 (16) 11 (16) 11 (16)<	Characteristic	No. (%) of Patients
Male 45 (64) Female 25 (36) Age (years)	Sex	
Female 25 (36) Age (years) Median (range) 61 (55-79) Age distribution (years) 55 to 59 31 (44) 55 to 59 31 (44) 62 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis ML 28 (40) MDS 3 (4) 6 ALL 11 (16) NHL MMDS 3 (4) 1 ATL 12 (17) MM MM 1 (1) 2 ATL 12 (17) MM MM 1 (1) 2 AA 2 (3) 1 HCT-CI 0 24 (34) 1 25 (36) 2 2 11 (16) 1 History of prior chemotherapy Yes 59 (84) No 11 (16) 11 (16) History of prior documented infections Yes 15 (21) No 55 (79) 11 (16) Disease status 55 (79) Standard risk	Male	45 (64)
Age (years) 61 (55-79) Age distribution (years) 55 to 59 55 to 59 31 (44) 60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis 3 (4) AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) Mistory of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 15 (21) High risk 55 (79) Conditioning regimen 4 (6) Flu/Bu/TBI 65 (93) Flu/Mel/TBI 65 (93) Tac	Female	25 (36)
Median (range) 61 (55-79) Age distribution (years) 55 to 59 55 to 59 31 (44) 60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis 4 AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCTCI 0 Q 24 (34) I 25 (36) 2 11 (16) A or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 15 (21) No 55 (79) Disease status 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone	Age (years)	
Age distribution (years) 31 (44) 55 to 59 31 (44) 60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis AML AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 15 (21) No 55 (79) Disease status 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Bu/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) O	Median (range)	61 (55-79)
55 to 59 31 (44) 60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis 3 (4) AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AAA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) <td< td=""><td>Age distribution (years)</td><td></td></td<>	Age distribution (years)	
60 to 64 16 (23) 65 to 69 17 (24) At least 70 6 (9) Diagnosis 3 AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 23 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) Abstroppic of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) <t< td=""><td>55 to 59</td><td>31 (44)</td></t<>	55 to 59	31 (44)
65 to 69 17 (24) At least 70 6 (9) Diagnosis 3 (4) AML 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 3 (1) A 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 15 (21) No 55 (79) Conditioning regimen 11 (1) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93)	60 to 64	16 (23)
At least 70 6 (9) Diagnosis AML 28 (40) MDS 3 (4) CML CML 4 (6) ALL ALL 11 (16) NHL ATL 12 (17) MM MTL 12 (17) MM MM 1 (1) PCL PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 61 (87)	65 to 69	17 (24)
Diagnosis 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AAA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen 11 (1) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mul/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 5/6 9	At least 70	6 (9)
o 28 (40) MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 5 Standard risk 15 (21) High risk 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47)	Diagnosis	
MDS 3 (4) CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 S/6 9 (13) 4/6 61 (87) Sex mismatch to UCB <	AML	28 (40)
CML 4 (6) ALL 11 (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	MDS	3 (4)
ALL II (16) NHL 8 (11) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	CML	4 (6)
NHL 8 (1) ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 9 (13) 4/6 6/1 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	ALL	11 (16)
ATL 12 (17) MM 1 (1) PCL 1 (1) AA 2 (3) HCT-CI 0 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes Yes 51 (73) No 19 (27)	NHL	8 (11)
MM I I PCL I I AA 2 (3) HCT-CI 0 24 (34) I 25 (36) 2 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes Yes 51 (73) No 19 (27)	ATL	12 (17)
PCL 1 (1) AA 2 (3) HCT-CI 24 (34) 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	MM	ιώ
AA 2 (3) HCT-CI 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes Yes 51 (73) No 19 (27)	PCL	ιώ
HCT-CI 24 (34) 0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status Standard risk Standard risk 15 (21) High risk 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes Yes 51 (73) No 19 (27)	AA	2 (3)
0 24 (34) 1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen Flu/Mel/TBI Flu/Mel/TBI 65 (93) Flu/Mu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes Yes 51 (73) No 19 (27)	HCT-CI	- (-)
1 25 (36) 2 11 (16) 3 or greater 10 (14) History of prior chemotherapy Yes Yes 59 (84) No 11 (16) History of prior documented infections Yes Yes 15 (21) No 55 (79) Disease status 55 (79) Conditioning regimen 55 (79) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis 27 (53) Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	0	24 (34)
2II (16)3 or greaterI0 (14)History of prior chemotherapyYesYes59 (84)NoII (16)History of prior documented infectionsYes15 (21)No55 (79)Disease statusStandard risk15 (21)High risk55 (79)Conditioning regimenFlu/Mel/TBI65 (93)Flu/Mel/TBI4 (6)OthersI (1)GVHD prophylaxis33 (47)HLA disparity to UCB33 (47)HLA disparity to UCB5/65/69 (13)4/661 (87)Sex mismatch to UCB51 (73)No19 (27)	1	25 (36)
3 or greater10 (14)History of prior chemotherapy10 (14)Yes59 (84)No11 (16)History of prior documented infections11 (16)Yes15 (21)No55 (79)Disease status55 (79)Conditioning regimen55 (79)Flu/Mel/TBI65 (93)Flu/Mel/TBI65 (93)Flu/Mel/TBI4 (6)Others1 (1)GVHD prophylaxis33 (47)HLA disparity to UCB5/65/69 (13)4/661 (87)Sex mismatch to UCB51 (73)No19 (27)	2	11 (16)
History of prior chemotherapy Yes 59 (84) No 11 (16) History of prior documented infections Yes 15 (21) No 55 (79) Disease status Standard risk 15 (21) High risk 55 (79) Conditioning regimen Flu/Mel/TBI 65 (93) Flu/Bu/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	3 or greater	10 (14)
Yes 59 (84) No 11 (16) History of prior documented infections 11 (16) History of prior documented infections 15 (21) No 55 (79) Disease status 55 (79) Standard risk 15 (21) High risk 55 (79) Conditioning regimen 55 (79) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis 27 (53) Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	History of prior chemotherapy	
NoII (16)History of prior documented infectionsYes15 (21)No55 (79)Disease statusStandard risk15 (21)High risk55 (79)Conditioning regimenFlu/Mel/TBI65 (93)Flu/Mel/TBI4 (6)Others1 (1)GVHD prophylaxis27 (53)Cyclosporine A alone33 (47)HLA disparity to UCB5/65/69 (13)4/661 (87)Sex mismatch to UCB51 (73)No19 (27)	Yes	59 (84)
History of prior documented infections Yes I5 (21) No 55 (79) Disease status Standard risk I5 (21) High risk 55 (79) Conditioning regimen Flu/Mel/TBI 65 (93) Flu/Bu/TBI 65 (93) Flu/Bu/TBI 4 (6) Others I (1) GVHD prophylaxis Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	Νο	11 (16)
Yes 15 (21) No 55 (79) Disease status 55 (79) Standard risk 15 (21) High risk 55 (79) Conditioning regimen 55 (79) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis 50 (79) Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	History of prior documented infections	
No55 (79)Disease statusStandard riskI 5 (21)High riskConditioning regimenFlu/Mel/TBI65 (93)Flu/Mel/TBI65 (93)Flu/Bu/TBI4 (6)Others1 (1)GVHD prophylaxisCyclosporine A alone37 (53)Tacrolimus alone33 (47)HLA disparity to UCB5/69 (13)4/661 (87)Sex mismatch to UCBYes51 (73)No19 (27)	Yes	15 (21)
Disease status Standard risk 15 (21) High risk 55 (79) Conditioning regimen Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	Νο	55 (79)
Standard risk 15 (21) High risk 55 (79) Conditioning regimen 55 (79) Flu/Mel/TBI 65 (93) Flu/Mel/TBI 4 (6) Others 1 (1) GVHD prophylaxis 7 (53) Cyclosporine A alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	Disease status	
High risk55 (79)Conditioning regimenFlu/Mel/TBI65 (93)Flu/Mel/TBI65 (93)Flu/Mel/TBI4 (6)Others1 (1)GVHD prophylaxisCyclosporine A alone33 (47)HLA disparity to UCB5/69 (13)4/661 (87)Sex mismatch to UCBYes51 (73)No19 (27)	Standard risk	15 (21)
Conditioning regimenFlu/Mel/TBI65 (93)Flu/Mel/TBI4 (6)OthersI (1)GVHD prophylaxisI (1)Cyclosporine A alone37 (53)Tacrolimus alone33 (47)HLA disparity to UCBIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	High risk	55 (79)
Flu/Mel/TBI 65 (93) Flu/Bu/TBI 4 (6) Others 1 (1) GVHD prophylaxis 2 Cyclosporine A alone 37 (53) Tacrolimus alone 33 (47) HLA disparity to UCB 5/6 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB 51 (73) No 19 (27)	Conditioning regimen	
Flu/Bu/TBI4 (6)OthersI (1)GVHD prophylaxisI (1)Cyclosporine A alone37 (53)Tacrolimus alone33 (47)HLA disparity to UCBI5/69 (13)4/661 (87)Sex mismatch to UCBIYes51 (73)No19 (27)	Flu/Mel/TBI	65 (93)
OthersI (1)GVHD prophylaxisCyclosporine A aloneTacrolimus alone33 (47)HLA disparity to UCB5/69 (13)4/661 (87)Sex mismatch to UCBYes51 (73)No19 (27)	Flu/Bu/TBI	4 (6)
GVHD prophylaxisCyclosporine A alone37 (53)Tacrolimus alone33 (47)HLA disparity to UCB5/65/69 (13)4/661 (87)Sex mismatch to UCBYesYes51 (73)No19 (27)	Others	ιώ
Cyclosporine A alone37 (53)Tacrolimus alone33 (47)HLA disparity to UCB5/65/69 (13)4/661 (87)Sex mismatch to UCBYesYes51 (73)No19 (27)	GVHD prophylaxis	
Tacrolimus alone33 (47)HLA disparity to UCB5/69 (13)4/661 (87)Sex mismatch to UCBYes51 (73)No19 (27)	Cyclosporine A alone	37 (53)
HLA disparity to UCB 5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	Tacrolimus alone	33 (47)
5/6 9 (13) 4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	HLA disparity to UCB	
4/6 61 (87) Sex mismatch to UCB Yes 51 (73) No 19 (27)	5/6	9 (13)
Sex mismatch to UCB Yes 51 (73) No 19 (27)	4/6	61 (87)
Yes 51 (73)	Sex mismatch to UCB	
No 10 (27)	Yes	51 (73)
17 (2/)	Νο	19 (27)

AML indicates acute myeloid leukemia; MDS, myelodysplastic syndrome; CML, chronic myeloid leukemia; ALL, acute lymphoblastic leukemia; NHL, non-Hodgkin lymphoma; ATL, adult T cell leukemia; MM, multiple myeloma; PCL, plasma cell leukemia; AA, aplastic anemia; Flu, fludarabine; Mel, melphalan; TBI, total body irradiation; Bu, busulfan; UCB, umbilical cord blood: HCT-CI, hematopoietic cell transplantation-specific comorbidity index.

Of these 70 patients, 25 were women and 45 were men. Their median age was 61 years (range: 55-79 years). The patients' diagnoses included acute myeloid leukemia (AML; n = 28), acute lymphoblastic leukemia (ALL; n = 11), MDS (n = 3), CML (n = 4), non-Hodgkin lymphoma (NHL; n = 8), adult T cell Download English Version:

https://daneshyari.com/en/article/2105780

Download Persian Version:

https://daneshyari.com/article/2105780

Daneshyari.com