Severe Aplastic Anemia

Working Party

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Function of distribution of survival

1

Field

Score

Graft

Curves

0.25

0.50

0.75

1.00

OS

0 1 2 3 4 5

STRATI: sct_type=1 sct_type=2

Aim + methods: outcome of two allogeneic hematopoietic stem cell transplantation (HSCT) has been studied in 136 patients affected with severe congenital bone marrow failure. The curves in panels C and D are shown for the maximal follow-up and were not statistically analyzed past the point of 5 patients. Mismatched includes both related and unrelated donors.

Results: the 3-year overall survival (OS) was 82%, and transplant related mortality was 17%. Transplants performed below the age of 10 years, in recent years and from HLA-matched related or unrelated donors were associated with a significantly better OS. Moreover, in multivariate analysis HLA matched related donor and prophylaxis with cyclosporine A and methotrexate were associated with lower occurrence of acute GVHD. No secondary malignancies occurred after a median follow-up of 4.6 years.

Conclusion: the outcome of HSCT for SCN from HLA-matched donors in patients younger than 10 years is acceptable. Nevertheless, the mortality is not negligible so far; a careful selection of HSCT candidates should be undertaken.

Second allogeneic HSCT for aplastic anaemia

S. Cesaro et al.

Aim + methods: the outcome of a second allogeneic transplant (HSCT) in 162 patients, treated in the EBMT centres from 1998 to 2009, was assessed. A sibling or an unrelated donor was used in 110 and 52 transplants, respectively.

Results: the same donor as for the first HSCT was used in 81% of transplants while a change in the choice of stem cell source was reported in 56% of patients, mainly from bone marrow to peripheral blood. The stem cell source was bone marrow in 31% and peripheral blood in 69% of transplants. Neutrophils and platelets engraftment occurred in 85% and 72% of patients, after a median time of 15 days and 17 days, respectively. Grade II-IV acute graft versus host disease (GVHD) and chronic GVHD occurred in 21% and 37% of patients, respectively. Graft failure (GF) occurred in 42 patients (26%). After a median follow-up of 3.5 years, the 5-year overall survival (OS) was 60.7%. In multivariate analysis, the factor significantly associated with a better outcome was a Karnofsky/Lansky score > 80 (higher OS).

Conclusion: a second HSCT is a feasible rescue option for GF in SAA with a successful outcome in 60% of cases.

Outcome of aplastic anemia in children

C. Dufour et al.

Aim + methods: outcome of 563 Aplastic Anaemia (AA) children aged 0-12 years reported to the EBMT, according to treatment received were analysed.

Results: overall survival (OS) after upfront human leucocyte antigen-matched family donor (MFD) HSCT or immunosuppressive treatment (IST) was 91% vs. 87% (P = 0.8). Event-free survival (EFS) after upfront MFD HSCT or IST was 87% vs. 33% (P = 0.001). Ninety-one of 167 patients (55%) failed front-line IST and underwent rescue HSCT. The OS of this rescue group was 83% compared with 91% for upfront MFD HSCT patients and 97% for those who did not fail IST upfront (P = 0.017). Rejection was 2% for MFD HSCT and HSCT post-IST failure (P = 0.73). Acute graft-versus-host disease (GVHD) grade II-IV was 8% in MFD graft vs. 25% for HSCT post-IST failure (P < 0.0001). Chronic GVHD was 6% in MFD HSCT vs. 20% in HSCT post-IST failure (P < 0.0001).

Conclusion: MFD HSCT is an excellent therapy for children with AA. IST has a high failure rate, but remains a reasonable first-line choice if MFD HSCT is not available because high OS enables access to HSCT, which is a very good rescue option.

In Vivo T cell depletion strategies within HSCT for Idiopathic aplastic anaemia

S. Samarasinghe et al.

Aim + methods: Compare the outcome of 1837 AA patients transplanted in EBMT centres in the period 2000-2013, comparing different strategies of anti-T cell serotherapy: i. no serotherapy; ii ATG; iii Alemtuzumab.

Results: Acute GVHD was significantly lower in both ATG (13%) and Alemtuzumab (7%) patients as compared with no serotherapy (19%)(p=0.001 for both); among the 2 serotherapy, the aGVHD rate was lower in the Alemtuzumab group (p=0.012). Alemtuzumab was also more effective in the prevention of chronic GVHD (see figure on the left).

The use of serotherapy is associated with a significantly better overall survival.

Conclusion: the use of serotherapy significantly reduces the risk of both acute and chronic GVHD. Considering the fact that the composite endpoint of “GVHD-free survival” should be a goal of a HSCT procedure (even more for a non-malignant disease such as AA), Alemtuzumab should be recommended as preferred serotherapy in the context of HSCT for AA.

Figure: Kaplan-Meier curves of event-free survival (EFS). Left: outcomes following upfront-unrelated donor HSCT are similar to matched sibling/family donor HSCT in childhood severe aplastic anaemia. (aAA). Right: EFS following upfront-unrelated donor HSCT is superior to immunosuppressive treatment (IST) with lymphoglobulin and ciclosporin in childhood SAA.

Post-upfront MUD/MUD HSCT (n=28) and MSD HSCT (n=87). MUD, matched unrelated donor; MMUD mismatched unrelated donor; MSD, matched sibling/family donor.

Figure: Overall survival (OS) by type of donor. In patients who underwent a second HSCT, no difference was found according to the origin of the donor: 56% (95% CI 39-8-70.7) for unrelated donor group versus 62.4% (95% CI 51.7-71.4) for sibling donor group HSCT; P = 0.9. OS for the whole group was 60.7% (51.7-68.4).

Aim + methods: the outcome of a second allogeneic transplant (HSCT) in 162 patients, treated in the EBMT centres from 1998 to 2009, was assessed. A sibling or an unrelated donor was used in 110 and 52 transplants, respectively.

Results: the same donor as for the first HSCT was used in 81% of transplants while a change in the choice of stem cell source was reported in 56% of patients, mainly from bone marrow to peripheral blood. The stem cell source was bone marrow in 31% and peripheral blood in 69% of transplants. Neutrophils and platelets engraftment occurred in 85% and 72% of patients, after a median time of 15 days and 17 days, respectively. Grade II-IV acute graft versus host disease (GVHD) and chronic GVHD occurred in 21% and 37% of patients, respectively. Graft failure (GF) occurred in 42 patients (26%). After a median follow-up of 3.5 years, the 5-year overall survival (OS) was 60.7%. In multivariate analysis, the factor significantly associated with a better outcome was a Karnofsky/Lansky score > 80 (higher OS).

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