

CBSCT in Japan

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Cord blood stem cell transplantation (CBSCT) was first performed in a patient with AML from his sibling donor in 1994 in Japan. Since then nearly fifty patients received CBSCT from sibling donors.

Several cord blood banks were established around 1996, and the first unrelated CBSCT (uCBSCT) was done by the Kanagawa Cord Blood Bank in 1997. These cord blood banks were organized as the Japan Cord Blood Network (JCBBN) in 1999.

There have been 1441 uCBSCTs supplied through JCBBN until June 2004. About 30% were children under 15 years old and 70% were adults. In the last year (2003) the most transplants were done in elderly patients over 50 years old (40%).

Transplant outcomes were reported from transplant centers to each cord blood bank and have been analyzed by several researchers. Here, we would like to report the clinical outcomes in patients who underwent uCBSCT between 1997 and 2002.

1. Pediatric recipients

The diagnoses of the recipients were ALL(44%), AML(21%), other malignant diseases(12%) and non-malignant diseases (23%). Engraftment was achieved in 83% of pediatric patients. Engraftment failure was more common in patients with non-malignant diseases than in those with malignant diseases, 37.1% vs 13.7%, respectively. These incidences were significantly higher than in unrelated BMT. Neutrophil and platelet engraftment rates were influenced by risk, cell dose and HLA matching.

Incidence and severity GVHD were not different from uBMT, but more patients with grade 3 to 4 acute GVHD survived in uCBSCT than in uBMT.

Engrafted and disease free survival (DSF) rates were 44% in standard risk (SR) ALL, 5% in high risk (HR) ALL, 40% in SR AML and 10% in HR AML. Two year DFS in infantile ALL (MLL positive) was 64%, if they received uCBSCT in their first remission.

The most common cause of death was infection followed by other transplant related mortality and relapse of the original disease.

2. Adult patients

National wide analysis has not been completed in adult patients.

The Institute of Medical Science of Tokyo University has reported excellent results of uCBSCT in adult patients. Two year DFS was 76.6% in 18 patients with AML, and 76.2% in patients with advanced MDS.

Miyakoshi et al. reported an encouraging result of uCBSCT in adult patients with advanced hematological malignancies using reduced intensity conditioning regimen. The complete donor chimerism was achieved in 93% of patients on day 60 after uCBSCT, and one year DFS was 22.2%.

Hara et al. have conducted multiple unit uCBSCT in adult patients. Seven out of 11 patients are currently surviving and disease free.