

Cord Blood Banking: a Paediatrician's Perspective

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Since the first successful case of cord blood transplantation (CBT) was reported in the late 80', cord blood (CB) has been increasingly used for transplantation in patients with serious haematological disorders. It is now one of the options of haemopoietic stem cell sources other than bone marrow (BM) and peripheral blood stem cells (PBSC).

We performed the first CBT in Hong Kong for a child with thalassaemia major in 1994. Cord blood transplant has since been performed for various diseases including leukaemia, immunodeficiency syndromes, rare disorders such as osteopetrosis and recently, advanced solid tumour. At Queen Mary Hospital, cord blood was the stem cell source in 33 (13%) of 245 paediatric transplants (Chart 1 and 2). Transplantation using matched sibling cord blood has achieved excellent results in all the patients with thalassaemia major, who became transfusion free after the procedure. For other disease types, CBT results in outcome comparable to transplantation using BM or PBSC. There are pros and cons in using cord blood and the selection depends on consideration of factors such as cell doses, urgency for transplant and availability of suitable cord blood units.

There are 3 forms of cord blood banking, namely hospital based storage for directed patient use, public banking for altruistic use, and private banking for own use. The concern about hospital based cord blood storage is the possibility of unnecessary intervention on sibling foetus as parents may wish to have a savior baby. For public cord blood banking, there is the obvious resource implication and concern about the utilisation rate.

More controversies have occurred surrounding private (autologous) CB banking and the medical field initially looked with skepticism, especially on issues of profit making and the queries about promotion on potential uses which may not be evidence-based. To address these controversies, the following questions need consideration. Firstly, is it true that the stored cord blood units have a reasonable utilisation rate? Secondly, is it true that there is no alternatives? If alternatives are available, is CB the superior source of the stem cells? Thirdly, is it true that the cost and resources are affordable and worth spending? Lastly, is it true that the current CB banking systems, the software and hardware

are reliable? For private CB banking, it should be an individual's choice of "insurance" in view of the low application and availability of alternatives. The parents should make their own choices after receiving proper information and giving consent. Special attention is required on different issues, i.e. accreditation and regulations, quality control, protection of consumers' rights, and conflict of interests for the involved parties.

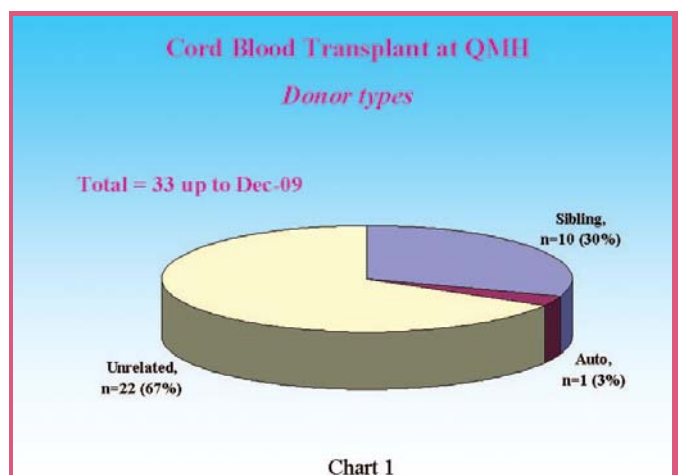


Chart 1

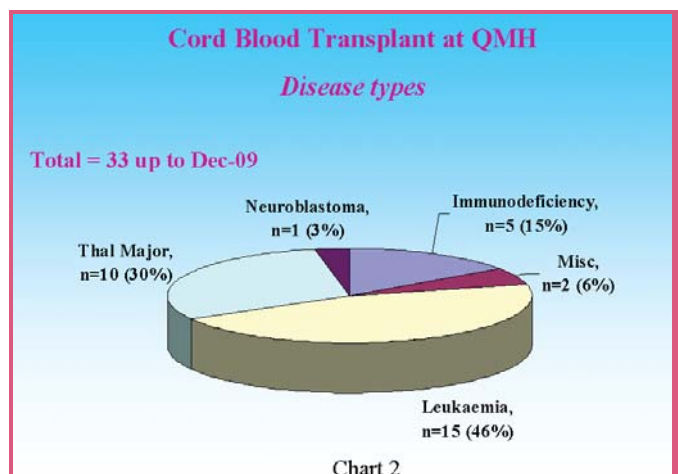


Chart 2