Incidence of human herpes virus-6 and human cytomegalovirus infections in donated bone marrow and umbilical cord blood hematopoietic stem cells.

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Abstract

This study examined the incidence of human herpes virus-6 (HHV-6) and human cytomegalovirus (HCMV) infections that are potentially transmitted to haematopoietic stem cells (HSC) transplant recipients via bone marrow (BM) or umbilical cord blood (UCB). Bone marrow progenitor cells were collected from 30 allogenic BM donors. UCB HSC were collected from 34 subjects. The extracted DNA was then processed using nested polymerase chain reaction (nPCR) technique. HCMV and HHV-6 serological status were determined by enzyme immunoassay (EIA). Nested PCR identified HCMV in 22 (73%) of 30 samples of BM progenitor cells but in only eight (23.5%) of 34 samples of UBC HSC ( P = 0.001). HHV-6 DNA was detected in 11 (36.6%) of 30 BM progenitor cells and in only one (2.9%) of 34 UBC cells ( P = 0.002). Both HHV-6 and HCMV infections were determined in nine (26.5%) of 34 bone marrow samples. The results indicate that, the risk of HCMV and HHV-6 via BM progenitor cells is higher than transmission by UCB cells ( P= 0.04).