**Latest Advancement in Bone Marrow Transplant**

Traditionally, bone marrow transplant offers the only hope of cure for certain groups of patients with leukaemia, serious blood diseases and some other fatal disorders. However, the chance of finding a perfectly matched bone marrow from a donor is low. There is only 25% of chance that the sibling's bone marrow matches with that of the patient's. The chance is even much lower to find a matched unrelated donor in the community. In most circumstances, the matching depends on the HLA **(human leucocyte antigen or the white cell blood groups which is genetically inherited from one's parents) of the recipient and donor.**

In recent years, many medical researchers are exploring the possibility to use the bone marrow donated by the patient's parents. A person's bone marrow cells composed of both his parents' genetic materials, i.e. half from mother and half from father. Therefore, the bone marrow from a parent can only half match with that of the patient's and the possibility of using it is low due to graft rejection and graft versus host disease.

Nevertheless, medical researchers have discovered a new technique – haploidentical donor transplant, which brings new hope to patients. This is done by collecting the peripheral blood stem cells from either the father or mother of the patient, and then remove the lymphocytes in it by special laboratory technique so as to avoid graft versus host diseases after transplant. The processed peripheral blood stem cells are then transplanted to the patient. This recent breakthrough has already been used to treat a patient at Queen Mary Hospital, and further clinical trial has to be taken in order to confirm the effectiveness of this new treatment.