

### **What is blood transfusion?**

Blood transfusion is the process of infusing whole blood components (red blood cells, platelets, plasma) prescribed by your doctor into your veins in order to achieve a therapeutic effect.

### **Why would doctors give blood transfusions?**

**Red blood cells** carry the oxygen in your blood to your vital organs. They can alleviate the symptoms of anaemia and bleeding. **Platelets** can prevent or stop bleeding by forming blood clots at the site of an injury. Platelet transfusion may be required for those who have a low number of platelets or whose platelets do not work efficiently. **Plasma** is a fluid that contains many substances including the clotting factors that help blood to clot.

Dependent upon the clinical conditions, blood transfusions are given to replace blood that has been lost or to correct serious or life threatening conditions due to low blood counts or deficiency of clotting factor(s). Your doctor will prescribe a blood transfusion according to your clinical condition. If you have any doubts or questions, you should ask your doctor in-charge.

### **What steps have been taken to make sure that the blood patients receive is safe?**

Blood supply and safety in Hong Kong have been maintained at a standard similar to most developed countries in Europe and North America. The Blood Transfusion Service (BTS) only collects blood from volunteer non-remunerated donors. Before giving blood, donors are assessed by a health enquiry questionnaire and interviewed about their health and risk factors for diseases. Blood is collected under stringent procedure and then subjected to extensive testing in accordance with well established international standards. The tests include those for blood group, hepatitis B and C, HIV, HTLV and syphilis and bacterial surveillance for platelet concentrates. In addition, the BTS has also implemented the ISO 9000 quality system and the Australian Therapeutic Goods Administration standards on Good Manufacturing Practice in order to further ensure blood quality and safety. Should your doctor decide that you need blood transfusion, a blood sample will be taken from you with clear identification for the hospital blood bank to cross match for blood that is compatible to your blood group.

### **What are the risks of receiving blood transfusion in Hong Kong?**

Similar to other medical procedures or treatment, blood transfusion does carry risks, no matter how small. Below is a list of transfusion related risks for you reference only. Please contact your attending doctor if you feel a detailed discussion would be helpful.

#### **A. Allergy**

This is usually a mild reaction (e.g. skin rash and itching) and is easily controlled with drugs. Severe allergic reactions are very rare (less than one in a hundred thousand). It may, however, be life threatening in rare circumstances.

#### **B. Fever**

Some patients may feel chills and feverish during or shortly after blood transfusion. Whether treatment is required will depend on his/her clinical condition. It will often subside without any consequence. However, if you have a history of febrile reaction with transfusions in the past, you should report this to your doctor.

#### **C. Haemolysis**

If the donor and your blood groups are mismatched, the donor red cells will be destroyed by your body after infusing into your body. This reaction is called haemolysis. Severe haemolytic reaction is exceptionally rare, at an incidence of less than one in a hundred thousand. However, it can result in kidney failure and other serious complications that may be life-threatening if this occurs. The hospital blood bank will ensure that the correct blood is given to prevent this type of reaction by meticulous testing.

#### **D. Transfusion Transmitted Infections**

At present, the risk of transfusion-transmitted infection cannot be eliminated entirely by the testing technology that is currently available. Based on the observed sero-prevalance of the local blood donor pool and the window period of the infection, it is estimated that locally the residual risk\* of HIV in a blood product is approximately one in 3.4 million, hepatitis C is less than one in ten million and hepatitis B is approximately one in a hundred and twenty six thousand. It is not feasible to generalize the exact risk of every infection for any patient receiving blood transfusion as there are many variable factors that would affect the risk estimation, such as the immune/infection status of the patient, the quantity of blood transfused etc. The residual risk of bacterial contamination in a red blood cell product that may cause serious transfusion-associated complications is estimated to be one in five hundred thousand, and one in ten thousand in a platelet concentrate product.

(\*The information on estimated residual risk was provided by Hong Kong Red Cross Blood Transfusion Service)

#### **E. Other**

Transfusion related acute lung injury (TRALI) is rarely seen in Chinese.

### **What are the risks of not having a transfusion?**

In simple terms, the purpose of giving blood transfusion to you is to replenish the blood or blood component(s) you need. Red blood cells carry the oxygen in your blood to your vital organs, such as the brain or heart. A decrease in oxygen can result in damage to these organs. Transfusion may be needed to prevent such damage. If you have a low platelet count or a deficiency in clotting factor, you are at a higher chance of bleeding. In some cases, this can result in serious major organ damage.

**Reference:** Hospital Authority

**If you need further information, please contact your doctor in charge.**