

**NHS Blood and Transplant (NHSBT) Board
29 November 2018**

A Patient Story

ZM is a 32-year-old lady who has not only been a dedicated blood donor but also put herself up for bone marrow and stem cell donation as a registered donor in the British Bone Marrow Registry (BBMR). ZM was called to donate bone marrow for a patient in need of a transplantation but unfortunately she failed her medical checks. She was found to be anaemic. Anaemia is not uncommon in ladies of her age group. However, this was disappointing news to ZM as anaemia will stop her donating the gift of life to someone in great need. Donating marrow is associated with loss of 600 to 1200 ml of blood and the donor needs to have an adequate level of haemoglobin before the donation can commence. BBMR staff understood and shared her feelings particularly when her blood donation history explains her commitments to help others.

ZM's marrow donation was requested to treat a 10-year-old boy in Germany who was suffering from relapsed leukaemia that was deemed incurable without a transplant. The boy was of Southern Asian ethnic origin and it is harder to find a donor for such a patient because of the wide variations of tissue types in certain ethnic groups as well as due to the fact that there are less numbers of donors from ethnic groups other than white Caucasian. Finding a matching donor for such a patient is a challenge and finding a match that subsequently fails their medical is a significant setback and disappointment. It is the BBMR strategy to encourage the enrolment of donors from ethnic groups that are currently not well represented.

The BBMR staff investigated the presence of other matching donors for this patient in the international registries. The news was not great. ZM was practically the only possible donor world-wide for this boy. ZM was not a full match (they did not match all 10 antigens) but matched 9 antigens and she was the closest.

ZM required iron therapy (usually tablets) to treat her anaemia and replenish her iron store. However, this will take weeks. Such delays can be detrimental to the boy's health as the leukaemia can grow back at any time. ZM accepted the BBMR medical staff suggestion to use intravenous iron therapy to speed up her response and allow the collection of marrow in time. To ensure swift progress, BBMR arranged for ZM to receive her iron therapy in a private clinic which was completed in July 2018. Her anaemia was corrected later in August and she proceeded to marrow harvest in September 2018. The donation was according to plan and the marrow was transported to Germany and transplanted into the boy later the same day of harvest.

The use of iv iron to treat anaemia is common practice for certain groups of patients. However, it is unusual measures for volunteer marrow donors. This is because iv iron is somewhat invasive (it requires an intravenous drip for a few hours) and can cause side effects such as flushing and sensitivity reactions. However, the risks were identified, discussed with the donor and successfully managed within a safe care pathway that was responsive, flexible and took into consideration both donor and recipient clinical needs.

Around 70% of patients needing a transplant lack a suitable family donor and their clinicians turn to the unrelated donor registries for help. Currently, these registries have around 22 million donors, of whom 370,000 are within the BBMR. These registries collaborate under the auspices of the World Marrow Donor Association. Still significant numbers of patients cannot find a match within the existing pools of donors and registries continue to recruit more donors. This explains how precious ZM's donation was. Around 60% of unrelated transplantations for UK patients receive stem cells/marrow from overseas and Germany is one of the main providers. The UK registries, including the BBMR, provide cell and marrow donations to overseas patients and the successful transplantation of this boy in Germany is an example.

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