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Expert Column

Adverse transfusion reaction: What can go wrong?

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Staff nurse: *Dr...Dr..., patient A complains of difficulty breathing. I just started the transfusion for the patient 5 minutes ago....* Does this sound familiar? Didn't you just sign the blood transfusion consent form? Do you really understand what you have acquired? Rightfully informed blood transfusion consent requires the recipient's signature to be attested on the form; except in an emergency situation, parents, guardians, the next of kin, or the attending specialist shall be allowed to give consent. And the process should have included the discussion of the following

components: expected benefits of transfusion, disclosure of the risks of transfusion and alternatives to transfusion, including no transfusion or, when appropriate, the option of medications such as iron or erythropoietin (EPO). It's almost absolutely undeniable that blood transfusion is a lifesaving procedure in an acute condition nevertheless, the undesirable hazard has always been the unwelcome guest!

We always think blood is 100% safe, but what we fail to understand is that it does carry some risk. Have you ever heard about adverse transfusion reaction? Medically, an adverse transfusion reaction is defined as an undesirable response or effect in a patient temporarily associated with the administration of blood or blood components. The most common signs and symptoms include fever, chills, urticaria and itching. So any bizarre symptoms during or after the transfusion are aberrant, and they have to be reported to the medical personnel immediately. **(3)**

According to Haemovigilance report 2016-2017, National Transfusion Medicine Service Malaysia, the ratio of adverse transfusion reaction events to total utilised blood products in 2017 was 1:202. ICYMI. **(1-2)** Why are we diving into this? Is it important to know about the reactions? Yes absolutely. Any undesirable events that occur any time up to 24 hours following a transfusion are known as acute transfusion reactions (ATR). A few examples of common ATR are allergy reactions, febrile non-haemolytic transfusion reactions (FNHTR), rarely transfusion associated dyspnea, severe anaphylaxis, transfusion-associated circulatory overload (TACO) or transfusion-related acute lung injury (TRALI).

The commonest adverse event is a mild allergic reaction, which is characterised by transient flushing urticaria or rash, which usually resolves with anti-histamine. Unheard-of? Anti-histamines are medications used to control allergic reactions. This means that, you actually feel a reddening of the skin, which is usually associated with a feeling of warmth and itchy welts. It's not the bed bug!!! However, rarely a moderate or severe form of the allergic event can manifest in some patients. A moderate allergic reaction presents with wheeze or angioedema with or without flushing, urticaria or rash without respiratory compromise or hypotension. Any signs and symptoms of respiratory and circulatory compromise such as bronchospasm, stridor and hypotension alarm a severe allergic reaction that requires urgent medical intervention or a prolonged hospital stay. **(5)**

Febrile non-haemolytic transfusion reaction (FNHTR) is not an uncommon event. A temperature rise of more than ? 38 degrees Celsius or between 1 and 2 degree Celsius from pretransfusion value should trigger the suspicion of FNHTR. A severe form of the event might warrant cessation of the transfusion, requiring prompt medical review and/ or directly resulting a prolonged hospital stay. Considering the benefit and clinical justification, your physician might sometimes choose to continue the transfusion after appropriate treatment. Most patients respond well to the medication. The transfusion process is then continued and completed without any complications. Thus, developing fever, chills and rigor anytime during or after the transfusion is not a normal phenomenon.

Is that all? There are other symptoms like shortness of breath, rapid breathing, coughing with frothy sputum, or even fever which are uncommon pulmonary complications of transfusion. It usually occurs within 24 hours and in some cases within 6 hours of transfusion. Clinically this sequelae narrows one's diagnosis towards TAD, TACO, severe anaphylaxis or TRALI. Before you can say jack Robinson, alert your nearest medical personnel immediately. Timely medical intervention permits a good prognosis and outcome. **(5)**

A decision to transfuse in a non-urgent setting should be made after a thorough discussion between the patient and the treating doctor, considering all the benefits and risks of transfusion process. In such an event, the recipient or patient should in all situation, should understand all the components explained during the consent process. Transfusion education plays an important role in creating awareness of its implication for the recipient. Expanding the knowledge and knowing the righteous reduces the risk and enhances the safe transfusion practice. The patient's safety is of the utmost importance in this aspect. Prompt reporting of such adverse events to the National Haemovigilance Coordinating Center aids in achieving its goal of improving transfusion quality and ultimately patient safety. **(3)**

Patient's safety matters!

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