A recent publication in the May 2016 issue of TRANSFUSION addresses whether pathogen reduction (PR) of blood components will harm more people than it helps in developed countries. *(Hess JR, Pagano MB, Barbeau JD, Johannson PI. Will pathogen reduction of blood components harm more people than it helps in developed countries? Transfusion 2016; 56:1236-1241.)*

The authors reviewed published data regarding pathogen reduction in order to estimate treated blood component physical and functional degradation, since this technology is associated with the dilution and loss of activity of the plasma and platelet components for which they are approved.

These losses were projected onto the measured effects of existing plasma and platelet dosing in trauma resuscitation. The benefits were estimated as reduced infectious disease deaths and compared to the estimated increase in mortality from uncontrolled hemorrhage.

The authors point out that, according to the US Food and Drug Administration, transfusion-transmitted infectious diseases caused five or fewer acute deaths each year from 2009 through 2014 in the US. Whereas, in-hospital fatalities from uncontrolled hemorrhage after trauma in the US are more than 10,000 annually and are reduced by 4% to 15% with conventional blood component resuscitation. The authors calculate that the loss of 20% of plasma potency and 30% of platelet potency due to pathogen reduction is likely to be associated with 400 extra trauma deaths each year in the US. The authors state the effects of pathogen reduction on platelets suggest that the losses cannot be corrected by transfusing additional components. Additionally, trauma represents a small fraction, estimated at 15%, of all massively transfused individuals. Therefore, the potential for excess mortality associated with pathogen reduction may be several fold greater than from trauma alone. In fact, they conclude that 1,000 to 2,000 excess deaths could be attributed to the implementation of pathogen reduction annually in the US alone.

The authors proceed to point out that even in the early phases of the AIDS epidemic, when between 1977 and 1985 8,000 individuals in the United States contracted HIV from allogeneic blood transfusion, implementation of pathogen reduction likely would have been associated with more deaths in massively transfused patients than it would have saved from transfusion-transmitted AIDS.

The authors ask whether, under current circumstances, it is important to implement this technology now since “it also carries a risk of significant harm”.

The authors conclude that “resuscitation of massive hemorrhage may be limited by blood component potency as shown in our literature review and analysis. The safety-versus-potency trade involved with current blood plasma and platelet pathogen reduction is likely to result in a net loss of life. Hemorrhagic risk from reduced blood product potency for patients with trauma and other indications for massive transfusion is an important consideration in risk-based decision making for implementing PR.”

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