molecules promoting RNA translation in CLL cells. Whether cytokines, chemokines, or extracellular vesicles could synergize with BCR engagement to stimulate translation of specific mRNA in primary CLL cells will require further investigations. A better understanding of the disease pathogenesis is crucial in the fight against cancer and will bring additional insight to developing new therapeutic approaches.

Conflict-of-interest disclosure: The authors declare no competing financial interests.

REFERENCES


the time of transfusion. Concurrently, 284 transfusion reactions were reported in patients who received noncontaminated platelet components. Analysis of 6 sets of diagnostic criteria for septic transfusion reactions demonstrated their lack of sensitivity and specificity for detecting reactions to bacterially contaminated transfusions, most commonly because they failed to recognize delayed reactions. The authors conclude that bacterial sepsis continues to occur at high frequency especially in neutropenic patients, that passive hemovigilance fails to reliably detect such reactions, and that commonly used clinical diagnostic criteria are not useful for the recognition of transfusion reactions associated with exposure to bacterially contaminated platelets.

The experience of Hong et al is unique in that it is not routine practice to culture platelet products at the time of issue. It is, however, likely to be representative of the US situation, as they found similar rates of bacterial contamination in both apheresis and whole blood–derived platelets and from 2 different suppliers using the 2 available postcollection bacterial culture screening techniques. Their finding of a risk of sepsis of 1:10 720 and of bacterial exposure of 1:2572 platelet components is compounded in patients receiving multiple platelet transfusions, especially in highly immunocompromised allogeneic stem cell transplant patients, who may receive as many as 30 to 50 platelet transfusions and are particularly susceptible to infection. The frequency of septic reactions in outpatients is also of particular concern, as these may not be recognized and treated in a timely fashion. The clinical significance of transfusion of low concentrations of bacteria is unclear. Hong et al did not find evidence of positive blood cultures within 48 hours of transfusion; however, infused bacteria may sometimes seed to protected sites and cause delayed infections, and an effect on long-term outcome cannot be excluded.

In this setting, the FDA recommends the implementation of measures to improve the safety of platelet transfusions from bacterial contamination and has approved multiple novel technologies to that end, including 2 rapid diagnostic tests that are performed on the day of transfusion to detect high concentrations of bacteria (>10^5 CFUs per mL) and a pathogen reduction process that is performed soon after collection and is capable of inactivating most but not all bacteria, viruses, protozoa, and leukocytes. These recommendations have not been implemented by transfusion services because of cost and convenience considerations and the perception, reinforced by passive hemovigilance data, that bacterial contamination is a remote risk. The data presented here render the latter view untenable. Snyder et al previously proposed that the FDA mandate the use of these approved technologies to reduce the risk of bacterial contamination, as a means to ensure universal implementation. In the interim, individual institutions and physicians should decide what is best for their patients and insist that they are appropriately protected using available FDA-approved technologies, as recommended by Hong et al.

Conflict-of-interest disclosure: Subsequent to the first review of this manuscript, R.J.B. took on the role of Chief Medical Officer at Cerus Corporation (Concord, CA).

REFERENCES


DOI 10.1182/blood-2015-12-685198
© 2016 by The American Society of Hematology
Transfusion-related sepsis: a silent epidemic

Richard J. Benjamin