



The important scientific and clinical advances of the last century in transfusion medicine include methods for avoiding hemolytic transfusion reactions and preventing transmission of viral infectious diseases” Blumberg et al (2019).

Abstract:

The important scientific and clinical advances of the last century in transfusion medicine include methods for avoiding hemolytic transfusion reactions and preventing transmission of viral infectious diseases. The next great clinical advances will require improving the efficacy and safety of transfusions, as well as acknowledgement of the now proven serious complications of transfusion, including nosocomial infection, thrombosis, inflammation and multi-organ failure. Possible strategies include (1) universal leukoreduction to mitigate transfusion immunomodulation effects and improve storage conditions, (2) minimizing transfusion of ABO incompatible antibodies and cellular/soluble antigens, (3) substituting use of safer solutions for normal saline during apheresis, component infusion and washing (4) new techniques to improve the efficacy and safety of blood components, including improved storage solutions/conditions, supernatant removal by washing, and rejuvenation and (5) maximizing the risk to benefit ratio of transfusions by employing more restrictive and physiologic indications for transfusion (including patient blood management) and improving clinical decision making through novel laboratory and bedside tests such as thromboelastography.

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Reference:

Blumberg, N., Cholette, J.M., Cahill, C., Pietropaoli, A.P., Winters, S., Phipps, R., Noronha, S.A., Heal, J.M., Kirkley, S.A., Fountaine, T.J., Henrichs, K., Masel, D. and Refaai, M.A. (2019) Transfusion medicine: A research agenda for the coming years. *Transfusion and Apheresis Science*. August 6th. doi: 10.1016/j.transci.2019.08.015. .

