Clinical Pathology Selected Abstracts

**Blood utilization and transfusion reactions in pediatric patients transfused with platelets**

February 2020—Even with advances in donor screening and infectious disease testing, the risk of transfusion-transmitted infections continues to be a concern. The FDA has approved a pathogen-reduction system for single-donor platelets, called Intercept Blood System (Cerus Corp.), to treat thrombocytopenic adult and pediatric patients. This pathogen-reduction technology destroys the infectious potential of bacteria, viruses, and parasites that may contaminate a platelet unit. However, the safety and efficacy of Intercept in pediatric patients is still being investigated. The authors conducted a study in which they presented their data on the ongoing safety monitoring and quality assurance assessment of conventional and pathogen-reduced platelets in pediatric patients at an academic tertiary care medical center. They performed a quality assurance review of platelet utilization, associated red blood cell transfusion trends, and the short-term safety of conventional versus pathogen-reduced platelets during a 21-month period (November 2016–July 2018) in which the medical center was transitioning from conventional to pathogen-reduced platelets. The authors assessed utilization in patients in the neonatal intensive care unit (NICU), infants from birth to one year who were not in the NICU, and children one to 18 years of age (ped). The results showed that the time to subsequent transfusion and red cell utilization in every group was similar. The number and type of transfusion reactions did not vary significantly based on platelet type. However, there was a small but statistically significant increase in the number of subsequent platelet doses following pathogen-reduced platelet transfusion in ped patients but not in the other groups. Limitations of the study were that patients were not randomized to receive only conventional or pathogen-reduced platelets and could receive multiple product types, and the absolute study size was small. The authors recommend ongoing assessment of pathogen-reduced platelets to determine potential long-term effects, particularly in young patients. This study, although limited in design and size, supports data on the safe use of pathogen-reduced platelets in a pediatric setting. Further research, with long-term follow-up, is needed for pediatric patients.


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**Collaboration between internal medicine physicians, other providers, and patients in the diagnostic process**

Team-based medicine approaches are necessary in today’s practice environment due to the complexity of patient care and diagnosis, breadth and depth of diagnostic testing, and specialization of providers. A National Academy of Medicine report, titled “Improving Diagnosis in Health Care,” noted that effective teamwork is a core goal of efforts to reduce diagnostic errors. To assess teamwork in the diagnostic process, the authors conducted a study to determine how internal medicine physicians are partnering with four underutilized groups represented in the diagnostic team that was highlighted in the National Academy of Medicine report: patients, interdisciplinary teams, radiologists, and pathologists. The authors surveyed internal medicine residents and attendings across nine residency programs at six Connecticut hospitals between June 2016 and March 2017. Survey questions assessed the frequency of collaboration with patients, interdisciplinary teams, radiologists, and pathologists using the response choices of every patient, two or more times per day, once daily, two or more times per week, once per week, once per month, once every few months, and never. Fifty-five percent (266 of 484) of physicians surveyed completed the questionnaire. The response rate was 49.4 percent for trainees and 80.5 percent for attendings. The majority of respondents were trainees from university-affiliated hospitals. Due to low response rates for some questions, the answers were consolidated into four categories: every patient, two or more times per day, once daily, and no more than two times per week. The study found that physicians infrequently communicated about the diagnostic process with their patients and inconsistently worked with other health care providers. Respondents were less likely to communicate with pathologists than radiologists, with 17.5 percent of physicians reporting never having discussed results with a pathologist for in-hospital patients and 52.1 percent never collaborating on the care of hospital outpatients. Of note, responses varied based on years of experience and gender. Residents were less likely than attendings to collaborate with radiologists in the outpatient setting at least weekly and to ever collaborate with pathologists in the outpatient setting. Also of note, female physicians were more likely to explain their diagnostic process with each patient and perform teach back in every patient encounter. The authors concluded that this study showed that there are opportunities to include other participants in the diagnostic process to reduce errors and potential harm. The lack of direct communication with radiologists and pathologists, especially among resident trainees, is a missed opportunity for physicians to more thoroughly understand testing and results.

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