# Transfusion Medicine – What’s New in Bacterial Mitigation Strategies?

July 14, 2021

**Julie McDowell:**

Between 2014 and 2018, microbial contamination of blood products was the third leading cause of transfusion-related fatality. Platelets are more likely than other blood products to become contaminated because they're stored at room temperature.

In 2019, the FDA updated requirements for bacterial mitigation strategy, which will result in significant changes to how platelets are manufactured, explains Dr. Alexis Peedin in this CAPcasts interview. Dr. Peedin led the development of a CAP Clinical Pathology Improvement Program course on this topic.

Dr. Peedin, can you talk about the need to address transfusion transmitted bacterial infections in the healthcare environment?

**Dr. Alexis Peedin:**

It's estimated that one in about 2,500 units of platelets are contaminated with bacteria, and there are about six deaths per year in the United States due to transfusion transmitted sepsis. Many more patients experience morbidity from transfusion transmitted sepsis even if they don't die from that condition. The vast majority of these bacterial infections are attributed to platelet units that are issued on day four or five after collection. So the FDA has created new strategies to reduce the likelihood of contamination of platelet units with bacteria.

**Julie McDowell:**

Now, what are the new FDA requirements for bacterial mitigation in platelet supply?

**Dr. Alexis Peedin:**

A number of one-step and two-step strategies have been offered by the FDA to comply with these requirements. But the two-step strategies are likely to introduce many logistical challenges and are probably not going to be adopted by blood suppliers. The single step strategies, specifically pathogen reduction and large volume delayed sampling, are most likely to be utilized.

**Julie McDowell:**

What is the technology used to meet these requirements?

**Dr. Alexis Peedin:**

Pathogen reduction of platelet units inactivates a broad spectrum of pathogens that can cause transfusion transmitted infections, including bacteria. This is accomplished by adding Amotosalen, which is a psoralen analog, and then exposing the platelet unit to UVA light. This causes DNA and RNA breakage to eliminate the potential for replication in the vast majority of transfusion transmitted infections.

Pathogen reduction also offers protection against transfusion associated graft versus host disease, so these units do not require irradiation. Large volume delayed sampling entails collecting a larger aliquot from the platelet unit for culture no sooner than 36 hours after collection, where previously, aliquots were collected for culture at 24 hours after collection.

**Julie McDowell:**

What strategy or strategies has your institution implemented to address this problem?

**Dr. Alexis Peedin:**

At our institution, we are now using both pathogen reduced and large volume delayed sampling platelet units interchangeably with other types of platelet products for all patients, including neonates.

**Julie McDowell:**

So finally, Dr. Peedin, do you have any parting thoughts you'd like to share on this topic?

**Dr. Alexis Peedin:**

I would like to end by saying that pathogen reduced platelets are collected and issued in larger bags than conventional apheresis derived platelets, so this may have implications for storage space within the laboratory. Pathogen reduced units also cost more than conventional apheresis derived units, so lab directors will need to consider adjusting their blood purchasing budgets accordingly, as pathogen reduced units make up an increasingly large proportion of their inventory.

**Julie McDowell:**

Well, thank you, Dr. Peedin. For more information about the Clinical Pathology Improvement Program, or CPIP, course on this topic, please visit estore.cac.org and search for 'CPIP' and the course title, 'Transfusion Medicine: What's New in Bacterial Mitigation Strategy?' in the search function.

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