
EXPLORATION OF THE EFFECT OF PLATELET YIELD ON 5-7 DAY STORAGE

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Platelets are a blood component essential for normal blood clotting. Donated platelets are critical for the survival of many patients, but the currently accepted shelf life of platelets is only 5 days. Thus, maintaining an adequate supply of lifesaving platelets is an ongoing concern. Platelet supply could be increased if data supported an increased shelf life. Previous studies revealed that increasing numbers of platelets in the storage bag (platelet yield) is negatively correlated to shelf life. This study explores the effect of platelet yield on the longevity of the units and examines donor differences with respect to their platelet storage profiles. We studied 12 donor units, split into 36 experimental bags, loaded at four yield levels. Our goal was to ascertain the maximum platelet yield that maintained a bag pH above 6.2 at day 7. A platelet bag is considered “failed” when the pH drops below 6.2. We found that higher platelet yields correlated with decreasing bag pH, while donor differences were related to the magnitude of the bag failure. No bags loaded at nominal yields (the most commonly used yield) failed by day 7. Of note, none of the 18 bags loaded at high-nominal yields (a less common current practice) failed at day 5, but 3 failed before day 7. These results confirm

previous studies and support manufacturer determined yield limits and shelf life. Yields at and above manufacturer limits were associated with high failure rates, and are not recommended.