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Letter To Editor | Transfusion Medicine

STORAGE LESIONS IN CPDA-1 WHOLE BLOOD: CLINICAL IMPLICATIONS FOR TRANSFUSION PRACTICE

Dr Swastik Kumar Patel*

Senior Resident, Department of Transfusion Medicine and Blood Bank, AIIMS Rajkot *Corresponding Author

KEYWORDS :

Dear Editor,

I read with great interest the recently published article examining hematological and biochemical changes in CPDA-1 stored whole blood over a 35-day period. The topic is highly relevant, particularly in resource-limited settings where whole blood transfusion continues to be widely practiced.

The authors have effectively demonstrated that red blood cell parameters such as hemoglobin and RBC count remain relatively stable throughout the storage period, while leukocytes and platelets show a rapid and significant decline. This finding reinforces the limited clinical utility of stored whole blood as a source of viable leukocytes and platelets beyond the initial days of storage. Furthermore, the observed increase in serum potassium levels and slight reduction in sodium concentration during storage highlights the metabolic and ionic alterations that may pose risks, especially in vulnerable patient populations.

These findings are consistent with earlier studies that describe "storage lesions" in blood, including depletion of 2,3-diphosphoglycerate and adenosine triphosphate, reduced deformability of erythrocytes, and electrolyte imbalance during storage (1,2). The progressive rise in potassium levels, as also reported by Wallas (3), is particularly important in clinical decision-making, especially for neonates and patients with renal impairment.

The study supports the growing preference for component therapy over whole blood transfusion, as emphasized in transfusion medicine literature (4). Additionally, the recommendation to use fresh blood (less than 7 days old) in critically ill patients aligns with findings by Koch et al., who reported increased complications associated with prolonged storage of red blood cells (5).

While the study provides valuable insights, inclusion of clinical outcome correlations and a larger sample size would further strengthen its applicability. Future studies may also explore additional biomarkers of storage lesions and their direct clinical impact.

In conclusion, this work contributes significantly to understanding the limitations of stored whole blood and underscores the importance of appropriate transfusion practices tailored to patient needs.

Sincerely,
Dr Swastik Kumar Patel
Department of Transfusion Medicine and Blood Bank AIIMS Rajkot, Gujarat, India

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