

PENGARUH LAMA SIMPAN *PACKED RED CELL* DALAM LARUTAN PRESERVATIF TERHADAP PERUBAHAN MORFOLOGI ERITROSIT

(STUDI LITERATUR)

Rika Asri Nuraeni

P17334117059

ABSTRAK

Packed Red Cell adalah salah satu jenis komponen darah yang paling sering digunakan. Penyimpanan PRC yang benar merupakan salah satu cara menjaga kualitas eritrosit. PRC dapat disimpan sekitar 35-42 hari tergantung larutan antikoagulan atau pengawet yang digunakan untuk mencegah pembekuan darah atau koagulasi selama masa penyimpanan. Beberapa larutan preservatif yang biasa digunakan di antaranya adalah *Citrate Phosphate Dextrose* (CPD), *Citrate Phosphate Dextrose Adenine* (CPDA-1), *Saline Adenine Glucose Manitol* (SAGM). Selama proses penyimpanan PRC terjadi serangkaian perubahan biokimiawi seperti perubahan bentuk eritrosit. Perubahan bentuk eritrosit dapat disebabkan berkurangnya ATP pada eritrosit. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh lama simpan *Packed Red Cell* dalam larutan preservatif CPDA, SAGM, dan CPD-SAGM terhadap perubahan morfologi eritrosit. Penelitian ini menggunakan metode studi literatur yaitu metode *literature review* yang mengidentifikasi, menilai, dan menginterpretasi seluruh temuan yang berkaitan dengan pengaruh lama simpan *Packed Red Cell* dalam larutan preservatif terhadap perubahan morfologi eritrosit, untuk menjawab pertanyaan penelitian. Populasi dalam penelitian ini adalah penelitian yang telah dipublikasi dengan fokus berbagai lama penyimpanan darah donor dalam beberapa larutan preservatif, didapatkan sebanyak 7 jurnal penelitian yang berasal dari pencarian di *Google Scholar* dan *PubMed*. Berdasarkan studi literatur diperoleh hasil yaitu terdapat pengaruh lama simpan *Packed Red Cell* dalam larutan preservatif CPDA, SAGM dan CPD-SAGM terhadap perubahan morfologi eritrosit.

Kata Kunci: *Packed Red Cell* (PRC), Larutan preservatif, *Citrate Phosphate Dextrose* (CPD), *Citrate Phosphate Dextrose Adenin* (CPDA), *Saline Adenine Glucose Manitol* (SAGM), Morfologi Eritrosit

EFFECT OF STORED PACKED RED CELL IN PRESERVATIVE SOLUTION ON MORPHOLOGICAL CHANGES IN ERYTHROCYTES

(LITERATURE STUDY)

Rika Asri Nuraeni

P17334117059

ABSTRACT

Packed Red Cell is one of the most commonly used types of blood components. Proper storage of PRC is one way to maintain the quality of erythrocytes. PRC can be stored for about 35-42 days depending on the anticoagulant or preservative solution used to prevent blood clots or coagulation during the storage period. Some preservative solutions commonly used include Citrate Phosphate Dextrose (CPD), Citrate Phosphate Dextrose Adenine (CPDA-1), Saline Adenine Glucose Mannitol (SAGM). During the PRC storage process a series of biochemical changes occur such as changes in the shape of erythrocytes. Changes in the shape of erythrocytes can be caused by reduced ATP in erythrocytes. The purpose of this study was to determine the effect of stored Packed Red Cells in preservative solutions of CPDA, SAGM, and CPD-SAGM on morphological changes in erythrocytes. This study uses the literature study method, which is a literature review method that identifies, assesses, and interprets all findings related to the effect of stored Packed Red Cells in preservative solution to changes in morphology of erythrocytes, to answer research questions. The population in this study is a research that has been published with a focus on a variety of donor blood storage time in several preservative solutions, obtained as many as 7 research journals derived from searches on Google Scholar and PubMed. Based on the literature study, the results show that there is an effect of stored Packed Red Cells in preservative solutions of CPDA, SAGM and CPD-SAGM on morphological changes in erythrocytes.

Keywords: *Packed Red Cell (PRC), Preservative Solution, Citrate Phosphate Dextrose (CPD), Citrate Phosphate Dextrose Adenine (CPDA), Saline Adenine Glucose Mannitol (SAGM), Erythrocyte Morphology*