

# Model Prediksi Kebutuhan Tranfusi Packed Red Cell Perioperatif pada Operasi Tumor Tulang: Studi Retrospektif di Unit Pelayanan Bedah Terpadu Rumah Sakit Cipto Mangunkusumo = The Prediction Model for Red Blood Cell Transfusion in Bone Tumor Surgery: A Retrospective Study in The Surgical Centre of Cipto Mangunkusumo Hospital

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## Abstrak

Dua puluh persen dari operasi tumor tulang membutuhkan tranfusi darah Packed Red Cell (PRC) intraoperatif, dengan volume tranfusi rata-rata 1200 ml. Kelebihan permintaan darah menimbulkan kerugian biaya. Selama Januari-Juli 2017, RSCM mengalami kerugian Rp 5,381,100,000 akibat terbuangnya 7972 kantong darah. Penelitian ini bertujuan membuat model prediksi kebutuhan tranfusi PRC peribedah pada operasi tumor tulang berdasarkan faktor-faktor letak, ukuran, karakteristik keganasan tumor, nilai Hb prabedah dan nilai ASA prabedah. Penelitian ini memiliki desain kohort retrospektif dan dilakukan pada pasien dewasa yang menjalani pembedahan tumor pada tahun 2015-2017. Analisis dilakukan pada 82 data yang didapat dari rekam medis. Uji bivariat menunjukkan letak tumor, ukuran tumor, karakteristik keganasan tumor, nilai Hb prabedah dan nilai ASA prabedah memiliki hubungan bermakna terhadap kebutuhan tranfusi PRC perioperatif. Analisis multivariat regresi linier menunjukkan hanya letak tumor dan nilai Hb prabedah yang merupakan prediktor bermakna. Model alternatif hasil regresi logistik dan analisis tambahan dibuat untuk menentukan probabilitas tranfusi PRC perioperatif.

Twenty percent of bone tumor surgery requires intraoperative blood transfusion, mostly Packed Red Cell (PRC). Approximately 1200ml or 4-6 unit of PRC transfusion is given in a bone tumor surgery. Less accurate estimation of the need of transfusion caused excessively wasted blood requests and led to high expense loss. In January-July 2017 there were 7972 wasted bags of blood product, resulting in a loss of Rp. 5,381,100,000 in Cipto Mangunkusumo Hospital. This study aimed to develop a prediction model for the need of perioperative red blood cell transfusion in bone tumor surgery. This is a retrospective cohort study of adults patients underwent bone tumor surgery between 2015 to 2017. Data was retrieved from the medical records and 82 subjects were included. The bivariate analysis showed that tumor location, size, malignancy, preoperative hemoglobin level and ASA physical status were significantly correlated with perioperative needs of red blood cell transfusion. However, the linear regression showed that only tumor location and preoperative hemoglobin level were considered as significant predictors. Therefore we obtained an alternative model from logistic regression to determine the probability of the need for perioperative PRC transfusion and add additional factors in the analysis.