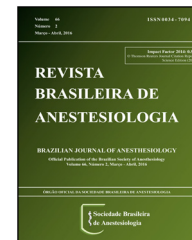




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SCIENTIFIC ARTICLE

Anesthesiologists' knowledge about packed red blood cells transfusion in surgical patients

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KEYWORDS

Blood transfusion;
Anesthesiology;
Knowledge;
Risks;
Adverse effects

Abstract

Introduction: Blood is an important resource in several lifesaving interventions, such as anemia correction and improvement of oxygen transport capacity. Despite advances, packed red blood cell (PRBC) transfusion still involves risks. The aim of this study was to describe the knowledge of anesthesiologists about the indications, adverse effects, and alternatives to red blood cell transfusion intraoperatively.

Method: Cross-sectional study using a questionnaire containing multiple choice questions and clinical cases related to relevant factors on the decision whether to perform PRBC transfusion, its adverse effects, hemoglobin triggers, preventive measures, and blood conservation strategies. The questionnaire was filled without the presence of the investigator. Likert scale was used and the average rank of responses was calculated. The Epi Info 7 software was used for data analysis.

Results: 79% of the institution's anesthesiologists answered the questionnaire; 100% identified the main adverse effects related to blood transfusion. When asked about the factors that influence the transfusion decision, hemoglobin level had the highest agreement (MR = 4.46) followed by heart disease (MR = 4.26); hematocrit (MR = 4.34); age (RM = 4.1) and microcirculation evaluation (MR = 4.22). Respondents (82.3%) identified levels of Hb = 6 g dL⁻¹ as a trigger to transfuse healthy patient. Regarding blood conservation strategies, hypervolemic hemodilution (MR = 2.81) and decided by drugs (MR = 2.95) were the least reported.

Conclusion: We identify a good understanding of anesthesiologists about PRBC transfusion; however, there is a need for refresher courses on the subject.

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PALAVRAS-CHAVE

Transfusão sanguínea;
Anestesiologia;
Conhecimento;
Riscos;
Efeitos adversos

Conhecimento dos anesthesiologistas sobre transfusão de concentrado de hemácias em pacientes cirúrgicos

Resumo

Introdução: O sangue é importante recurso em diversas intervenções mantenedoras da vida, como corrigir a anemia e melhorar a capacidade de transporte de oxigênio. Apesar dos avanços, a transfusão de concentrado de hemácias (TCH) ainda envolve riscos. O objetivo deste estudo foi descrever o conhecimento dos anesthesiologistas sobre as indicações, os efeitos adversos e as opções ao procedimento de transfusão de concentrado de hemácias no intraoperatório.

Método: Estudo transversal que usou questionário com perguntas de múltipla escolha e casos clínicos, referentes a fatores relevantes na decisão de transfundir concentrado de hemácias, seus efeitos adversos, gatilhos de hemoglobina, suas medidas preventivas e estratégias de conservação de sangue. Respondido sem a presença do pesquisador. Usada a escala de Likert e feito cálculo do ranking médio das respostas. Análise dos dados feita com programa Epi Info 7.

Resultados: Dos anesthesiologistas da instituição, 79% responderam ao questionário e 100% identificaram os principais efeitos adversos relacionados à hemotransfusão. Questionados sobre os fatores que influenciariam na decisão de transfundir, o nível de hemoglobina obteve a maior concordância (RM = 4,46), seguido de cardiopatia (RM = 4,26), níveis de hematócrito (RM = 4,34), idade (RM = 4,1) e avaliação da microcirculação (RM = 4,22). Dos entrevistados, 82,3% identificaram níveis de Hb = 6 g dL⁻¹ como gatilho para transfundir paciente sadio. Quanto às estratégias de conservação de sangue, a hemodiluição hipervolêmica (RM = 2,81) e a deliberada por medicamentos (RM = 2,95) foram as menos citadas.

Conclusão: Identificou-se uma boa compreensão dos anesthesiologistas a respeito da TCH. No entanto, há necessidade de cursos de atualização sobre o tema.

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Introduction

Blood is used as an important resource in many life-sustaining interventions.¹ Transfusion of allogeneic red blood cells is a widely used approach to treat anemia and improve the blood oxygen transport capacity during the perioperative period and in critically ill patients.² Studies show that approximately 85 million of packed red blood cells (PRBC) are transfused annually worldwide.³ Despite the advances in transfusion medicine, transfusion of PRBC still involves risks, sometimes resulting in a wide spectrum of adverse reactions.⁴ The use of blood products is also a costly practice for health care systems.⁵ This problem has raised a debate in the medical literature, especially regarding the correct use of blood components.^{3,6} In recent years, a significant fall in PRBC transfusion is observed. It is justified by educational initiatives aimed at raising awareness about the risks of transfusion and improved surgical techniques, as well as the need to consider options.² Thus, the decision-making in transfusion should consider the balance between risks and benefits and evaluate, in addition to hemoglobin values, the clinical aspects of the patient. Over the past two decades, the introduction of laboratory tests and improved donor screening have dramatically reduced the mortality and risk of procedure-related infections, and complications from non-infectious causes have become more frequent.⁷⁻⁹ A British study reported that errors in blood product management, storage, and incorrect

component transfusions still remain frequent and most reports are related to human failure.¹⁰ A more restrictive transfusion policy (which uses lower levels of hemoglobin as a trigger for transfusion) decreases the number of unnecessary transfusions, infections, and respiratory complications.¹¹ For more than 50 years there has been a concern to develop blood conservation strategies in order to minimize the need for transfusions. Nevertheless, these strategies have limitations, are rarely used, and most still need studies to determine risks and benefits.¹²⁻¹⁴ In this study, we intend to verify the theoretical knowledge of anesthesiologists at the IMIP regarding some aspects of PRBC transfusion, such as indications, options, and adverse effects.

Method

After approval by the Human Research Ethics Committee of the *Instituto de Medicina Integral Prof. Fernando Figueira* (IMIP), a descriptive cross-sectional study was performed with the institution's anesthesiologists between October 2013 and October 2015. For this purpose, a questionnaire was developed with multiple choice questions and clinical cases regarding the relevant factors in the decision whether to perform PRBC transfusion, its adverse effects, hemoglobin triggers, preventive measures, and blood conservation strategies. The questionnaire was based on a scale (Likert) in which respondents specify their level

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