DOI: https://doi.org/10.36489/saudecoletiva.2020v10i58p3951-3958

Adverse reactions to blood donation: an integrative review

Reacciones adversas a la donación de sangre: una revisión integrativa

Reações adversas à doação de sangue: uma revisão integrativa

ABSTRACT
Objective: Identify the most predominant adverse reactions to blood donation. Method: Integrative bibliographic review, with scientific articles indexed in the PUBMED and LILACS databases through the descriptors: "adverse effects" and "blood donors". Use the Boolean operators "and" and "or". The studies rescued were those published between 2013 and 2018. The study was carried out from March to May 2018. Results: 119 articles were found through the searches in the databases, leaving 13 articles for reading in full, being included only 4 from the gray literature by relation to the topic. There was a low occurrence of adverse reactions concerning the proportion of donors. Mild adverse reactions are predominant, followed by moderate and severe reactions. Conclusions: Knowing the signs and symptoms of adverse events will provide the development of a management strategy to control an adverse reaction to blood donation.
DESCRIPTORS: Adverse Effects; Blood Donors.

RESUMEN
Objetivo: Identificar las reacciones adversas más prevalentes a la donación de sangre. Métodos: Revisión bibliográfica integrativa, con artículos científicos indexados en las bases de datos PUBMED y LILACS a través de los descriptores: "adverse effects" y "blood donors". Se utilizaron los operadores booleanos "and" y "or". Los estudios rescatados fueron los publicados entre 2013 y 2018. El estudio se llevó a cabo de marzo a mayo de 2018. Resultados: Se encontraron 119 artículos mediante búsquedas en las bases de datos, quedando 13 artículos para leer en su totalidad, con solo 4 a partir de literatura gris relacionada con el tema. Hubo una baja incidencia de reacciones adversas en relación con la proporción de donantes. Hay un predominio de reacciones adversas leves, seguidas de reacciones moderadas y graves. Conclusiones: Conocer los signos y síntomas de los eventos adversos permitirá desarrollar estrategias de manejo para controlar las reacciones adversas a la donación de sangre.
DESCRIPTORES: Efectos Adversos; Donantes de Sangre.

RESUMO
Objetivo: Identificar as reações adversas mais prevalentes à doação de sangue. Métodos: Revisão bibliográfica integrativa, com artigos científicos indexados nas bases de dados PUBMED e LILACS através dos descritores: "adverse effects" e "blood donors". Utilizou-se os operadores boleanos "AND" e "OR". Os artigos resgatados foram aqueles publicados entre 2013 e 2018. O estudo foi realizado de março a maio de 2018. Resultados: Foram encontrados 119 artigos através das buscas nas bases de dados, restando 13 artigos para leitura na íntegra, sendo incluídos somente 04 a partir da literatura cinza por relação com o tema. Constatou-se uma baixa ocorrência de reações adversas em relação à proporção de doadores. Observa-se predomínio das reações adversas de grau leve, seguida pelas reações de grau moderado e grave. Conclusões: Conhecer os sinais e sintomas dos eventos adversos proporcionará o desenvolvimento de estratégias de gerenciamento para controle da reação adversa à doação de sangue.
DESCRITORES: Efeitos Adversos; Doadores de Sangue.

RECEIVED ON: 08/15/2020 **APPROVED ON:** 09/25/2020

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INTRODUCTION

Blood donation plays an important role in care practices. It is believed that an average of 250 million people are exposed to at least one emergency every year, in some cases the transfusion of blood components is essential for maintaining life. [1] In Brazil from 2010 to 2016, approximately 25 million people were candidates for the donation, with an annual average of around four million. Of these, 19.2 donors from 1,000 inhabitants of the Brazilian population were considered eligible for blood donation. [2] The rate of voluntary blood donors in Brazil places it above the middle-income countries that have a rate of 11,7 donors per 1.000 inhabitants, but well below half of the high-income countries with 36,8 donors per 1.000 inhabitants. Therefore, it is suggested to adopt strategies for attracting donors. [3]

Blood donation in most cases is uneventful, however, occasionally, some donors may experience adverse reactions during or after the end of the collection. [4] An unwanted response during or after donation is characterized as an adverse reaction to blood donation. [4] These are classified as mild clinical complications such as general malaise, anxiety, sweating, pallor and dizziness, in moderate when added with nausea followed by vomiting, rapid periods of unconsciousness and constant decrease in blood pressure (systolic BP 60 mmHg or less) and serious clinical complications when seizures or sudden loss of consciousness add up. [5]

These reactions must be investigated and recorded, aiming at corrective and preventive actions by the technical team where the collections are carried out. [3] In addition, it is necessary to report adverse reactions by the service where it occurred, for the national health surveillance system, in accordance with current legislation or specific guidelines of the National Hemovigilance System. [6]

In order to minimize adverse reactions to blood donation, donors are assessed through an individual interview called clinical screening. [5] Clinical screening should be carried out rigorously by classifying the candidate as unfit to possibly present an unwanted response to blood donation. [7]

This screening consists of the clinical and epidemiological assessment of the donor's current health status, habits and behaviors, thus determining whether the donor is able to donate blood without impairing his health and should always be done when the donor will perform the act to donate blood. [8] It is clear that the preparation of health professionals in hemotherapy services to deal with these situations is extremely important, given the need to know how to manage the situation, ensuring donor safety and well-being and notifying the reaction after the event. [4, 5, 9]

Among these professionals, the nursing team stands out, since it is in direct contact with donors during the blood donation process, so they need to be prepared for the first care in order to stabilize the clinical condition. [5, 10] Thus, the objective was to identify the most prevalent adverse reactions to blood donation.

METHOD

An integrative review was carried out, which consists of a research method, which uses the systematization and results of a database search, relevant to health care, allowing the synthesis of multiple published studies and the possibility of general conclusions regarding a particular area of study. [11,12]

Regarding the relevance of the study choices, the selection criteria were established: 1) identification of the theme and selection of the hypothesis or research question for the elaboration of the integrative review; 2) establishment of criteria for inclusion and exclusion of studies / sampling or literature search; 3) definition of the information to be extracted from the selected studies / categorization of the studies; 4) evaluation of the studies included in the integrative review; 5) interpretation of results and 6) presentation of the review / synthesis of knowledge. 11

For data analysis, Prisma® was used, which consists of a checklist to evaluate the quality of studies. 13 The guiding question of the research was: "what are the most prevalent adverse reactions to blood donation?". The electronic databases used were: LILACS and PUBMED. The following search strategy descriptors were used: "adverse effects" AND "blooddonors". The se-

arch took place from March to May 2018. Studies published in full from 2013 to 2018 were retrieved, with full text available in Portuguese and English. Studies, cross-sectional and cohort design were included. For the purpose of excessive inclusion of articles, all keywords were selected and identified in the three main fields of research (title, abstract and keywords). In this way, the keywords should be included in at least one of the three research fields. The entire selection process was carried out in the presence and agreement of two researchers.

RESULTS

119 articles were found from the searches in the databases. After reading the titles and abstracts, 13 articles remained. Subsequently after reading in full, no study with a specific relationship to the topic was found, however, based on the analysis of the gray literature, four articles were included in this review.

Of the selected studies, two were Brazilian, one Indian and one Italian. Table 1 shows the type of study carried out, corresponding to half cohort and the other transversal, that is, all studies had level of evidence IV. There was a low occurrence of adverse reactions in relation to the proportion of donors, being 1.369 (3%) of 45.584 thousand; 113 (0,6%) of 19.045 thousand; 16.129 (2,2%) of 724.861 thousand; and 63 (1,2%) of 4.906 thousand, respectively. [5, 9, 13, 14]

There is a predominance of mild adverse reactions, 1269 (92,6%), 79 (0,4%), 15.239 (94,4%) and 59 (1%) [5, 9, 14, 15,] the most common being general malaise, dizziness, pallor, agitation and sweating. Following moderate reactions, 79 (5,8%), 9 (0,05%), 745 (4,6%), with a record of transient loss of consciousness and nausea followed by vomiting [5,9,15], tendency to lipothymia, facial darkening and hypotension. [5]. Finally, to severe reactions, 21 (1,6%), 1 (0,005%), 145 (0,9%) and 4 (0,2%). [5,9,14,15]

DISCUSSION

There is a low prevalence of adverse reactions related to blood donation. Despite few risks to the health of donors, they can impact those who presented reactions, emphasizing the importance of recording information, such as prior conduct to donation and type of adverse reaction in a preventive manner. [4]

For screening purposes, all hemotherapy services should provide information about blood donation and possible complications during or after the procedure. A method of easy communication of the donor and service for late events is guided, with the purpose of being notified even hours or days after the donation, also carrying out the record of the conduct provided. [15] It is perceived that the knowledge of the professionals who perform the care is of paramount importance, both in the screening phase during the application of the clinical questionnaire and in the donation itself.

With free access to previous records, it is possible to add information in future documents to perform an effective clinical

Table 1: Characterization of eligible studies from the Prisma database, included in the integrative review, São Paulo-SP, 2020.

Estudo	Amostra	Nível de Evidência e Delineamento	Objetivos	Principais Resultados
Silva et al., Texto Contexto Enferm, 2014.5 Nursing care procedures in response to adverse events to blood donation.	45.584	(IV) Coorte	Identificar os tipos de eventos adversos e suas manifestações clínicas, analisando as condutas de enfermagem que foram adotadas frente a essas reações.	Ocorreram 1369 (3%) eventos adversos, sendo 1269 (92,6%), 79 (5,8%) e 21 (1,6%) leves, moderados e graves respectivamente. As manifestações clínicas graves foram convulsão, contratura muscular e lipotimia.
Goncalez et al., Author manuscript, 2013.15 Vasovagal reactions in whole blood donors at 3 REDS-II blood centers in Brazil.	724.861	(IV) Transversal	Avaliar a frequência e os fatores associados às reações vaso-vagais em doadores de sangue.	Foram registradas 16.129 (2,2%) reações vaso-vagais, sendo 15.239 (94,4%) leves, 745 (4,6%) moderadas e 145 (0,9%) graves.
Pathak et al., Blood Transfus, 2011.9 Adverse reactions in whole blood donors: an Indian scenario.	19.045	(IV) Coorte	Estimar a frequência e o tipo de evento adverso ocorrido com doadores de sangue e avaliar as práticas que ajudariam a minimizá-los.	Constatou-se 113 (0,6%) eventos adversos. Sendo 79 (0,4%) leves, 9 (0,05%) moderados e 1 (0,005 %) graves.
Crocco; D'Elia, Blood Transfus, 2007.14 Adverse reactions during voluntary donation of blood and/or blood components.	4.906	(IV) Transversal	Estimar a frequência e o tipo de evento adverso a doação de sangue quanto a sua gravidade.	Da amostra analisada, 63 (1,2%), sofreram algum tipo de reação adversa sendo 59 (1%) reações leves e 4 (0,2%) reações graves sendo estas, vômitos, perda de consciência e síncope convulsiva.

Prepared by the authors.

screening, reducing the occurrence of these events. [15] As limitations, there is a scarcity of studies, since there are not many scientific publications about adverse reactions to blood donation, especially in Brazil. Further studies are needed to find out the main reasons why donors present these unwanted responses and management practices adopted so that, in this way, one can intervene more precisely. The quality of the included studies is highlighted as the sample inconsistencies highlighted in the analyzed variables.

To prevent new adverse reactions, it is suggested to reduce the waiting time for donation, avoid fasting for more than four hours and provide water and snacks before donation. In addition, one must identify anxious donors and assure them the greatest comfort and pay close attention to the team. Avoid sitting or semi-sitting during the donation and pay attention to the first signs and symptoms. [9, 16, 17] The importance of notification must always be reinforced with the professionals who provide care, since it is a reactive tool for risk management, essential for hemovigilance and monitoring of adverse events. [6]

CONCLUSION

It is concluded that the prevalence of adverse reactions is low and the most prevalent are mild reactions, thus showing the low risk involved in the blood donation process. It is hoped that the study can support the development of future literary productions, aiming to minimize these events, with a focus on the safety of donors involved in this process. ■

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2. BRASIL. Agência Nacional de Vigilância Sanitária. 5° Boletim de Produção Hemoterápica. Ministério da Saúde: Brasília, 2018. Disponível em:http://portal.anvisa.gov.br/documents/33840/2817173/5%C2%BA+Boletim+de+Produ%C3%A7%C3%A3o+Hemoter%C3%A1pica/d3f3788d-a907-4180-a642-4e2e22ed53ce >.

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