

## HEMOTHERAPY AND IMMEDIATE TRANSFUSION REACTIONS: ACTION AND KNOWLEDGE OF THE NURSING TEAM

HEMOTERAPIA E REAÇÕES TRANSFUSIONAIS IMEDIATAS: ATUAÇÃO E CONHECIMENTO DE UMA EQUIPE DE ENFERMAGEM

HEMATOLOGÍA Y REACCIONES TRANSFUSIONALES INMEDIATAS: DESEMPEÑO Y CONOCIMIENTO DEL PERSONAL DE ENFERMERÍA

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### ABSTRACT

Immediate transfusion reactions are those that occur during the transfusion or in the first 24 hours after the procedure. These complications are emergent situations and can bring serious harm to patients, including fatal consequences. Nursing professionals play a key role in patient safety and detection of signs and symptoms of transfusion reactions. Objective: to verify the knowledge of the nursing team about hemotherapy, immediate transfusion reactions and care indicated in these cases. Methodology: this is a descriptive study with a quantitative approach. The sample consisted of nurses and nursing technicians who make up the nursing team of an adult emergency room. Results: the majority of participants (62%) reported being prepared to follow up the patient during transfusion therapy and 65.38% had the habit of monitoring the patient during this procedure. Few signs and symptoms of transfusion reactions were cited. The main responses were: fever (62.07%), followed by pruritus (44.83%) and tremor (37.93%). Few participants (28%) were able to inform the period in which these signs may arise. Regarding the care that should be adopted in the case of immediate transfusion reactions, the most cited response was to interrupt the transfusion (93.10%), followed by informing the physician (86.21%), and reporting to the blood bank (48.28%). Conclusion: despite the participants' confidence in performing such activity, the research results show little preparation of the team. It is necessary that the nursing professionals seek more knowledge and that institutions support this learning, recognizing the weaknesses and potentialities of their teams.

**Keywords:** Transfusion Reaction; Blood Transfusion; Inservice Training; Nursing Team; Nursing Care.

### RESUMO

As reações transfusionais imediatas são aquelas que acontecem durante a transfusão ou em até 24 horas após. Essas complicações são situações emergenciais e podem trazer sérios prejuízos aos pacientes, inclusive fatais. Os profissionais de enfermagem exercem um papel fundamental na segurança do paciente e na detecção de sinais e sintomas de reações transfusionais. Objetivo: verificar o conhecimento da equipe de enfermagem sobre hemoterapia, reações transfusionais imediatas e cuidados indicados diante desses casos. Metodologia: trata-se de estudo descritivo com abordagem quantitativa. A amostra foi composta pelos enfermeiros e técnicos de enfermagem que compõem a equipe de enfermagem de um pronto-socorro adulto. Resultados: a maioria dos participantes (62%) informou se sentir preparada para acompanhar o paciente durante a terapia transfusional e 65,38% possuem o costume de acompanhar o paciente durante esse procedimento. Em relação aos sinais e sintomas das reações transfusionais, poucos foram citados. As principais respostas foram: febre (62,07%), seguida de prurido (44,83%) e tremor (37,93%). Pequena parte (28%) soube informar o período em que esses sinais podem surgir. Sobre os cuidados que devem ser tomados diante das reações transfusionais imediatas, a resposta mais citada foi interromper a transfusão (93,10%), seguida de comunicar o médico (86,21%) e comunicar o banco de sangue (48,28%). Conclusão: apesar da confiança dos participantes em realizar tal atividade, os resultados da pesquisa demonstram pouco preparo da equipe. É preciso que o profissional de enfermagem busque mais conhecimento e que as instituições favoreçam esse aprendizado, reconhecendo as fragilidades e as potencialidades de sua equipe.

**Palavras-chave:** Reação Transfusional; Transfusão de Sangue; Capacitação em Serviço; Equipe de Enfermagem; Cuidados de Enfermagem.

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## RESUMEN

Las reacciones transfusionales ocurren durante la transfusión o dentro de las 24 horas siguientes. Suelen ser emergencias, a veces fatales. Los profesionales de enfermería desempeñan un papel clave en la seguridad del paciente para detectar síntomas y señales de las reacciones transfusionales. **Objetivo:** Verificar el conocimiento del equipo de enfermería sobre la hemoterapia, las reacciones transfusionales inmediatas y la atención indicada en estos casos. **Metodología:** Se trata de un estudio descriptivo de enfoque cuantitativo. La muestra estuvo constituida por enfermeras y técnicos de enfermería que integraban el personal de enfermería de un servicio de guardia de emergencias de adultos. **Resultados:** La mayoría de los participantes (62%) manifestó sentirse preparada para acompañar al paciente durante la terapia transfusional y un 65,38% mencionó que solía acompañar al paciente durante dicho procedimiento. Los principales síntomas y señales de las reacciones transfusionales eran fiebre (62,07%), prurito (44,83%) y temblores (37,93%). Algunos (28%) supieron informar el período durante el cual pueden surgir los síntomas y las señales. Sobre los cuidados indicados para las reacciones transfusionales inmediatas, la respuesta más citada fue interrumpir la transfusión (93,10%), comunicar el hecho al médico (86,21%) y al banco de sangre (48,28%). **Conclusión:** A pesar de la confianza de los participantes en el desempeño de sus tareas, los resultados de la encuesta indican poca capacitación del personal. El profesional de enfermería debería adquirir más conocimiento y las instituciones deberían favorecer tal aprendizaje reconociendo las debilidades y potencialidades de su personal.

**Palabras clave:** Reacción a la Transfusión; Transfusión Sanguínea; Capacitación em Sevicio; Grupo de Enfermería; Atención de Enfermería.

## INTRODUCTION

Blood transfusion is a procedure that places donor antigens, whether from cell or plasma membranes, in contact with the recipient antibodies. In order to avoid transfusion reactions, it is necessary to respect the compatibility between the erythrocyte antigens of the donor (ABO and Rh system) and the plasma antibodies of the recipient. For a safe transfusion to occur, the recipient's disease and the function of the hemotherapy drug to be transfused must also be known.<sup>1</sup>

Despite all precautions, blood transfusion is not risk free. Reactions of various natures can occur. These are classified as immediate or late reactions. According to RDC No. 153/2004 of the National Agency of Sanitary Surveillance (ANVISA), immediate reactions are those that occur during the transfusion or within 24 hours after the procedure. Late reactions occur 24 hours after the transfusion.<sup>2</sup>

Immediate transfusion incidents can be: acute hemolytic reaction; non-hemolytic febrile reaction; mild, moderate and severe allergic reaction; volume overload; bacterial contamination; non-cardiogenic pulmonary edema (transfusion-related acute lung injury – TRALI); hypotensive reaction; and non-immune hemolysis. All these reactions must be notified.<sup>1</sup>

These complications are emergent situations and can bring serious harm to patients, including fatal consequences. As the nursing team remains at the helm 24 hours a day, it plays a fundamental role in transfusion therapy. These professionals not only administer transfusions of blood component, but also carry out important data monitoring to prevent errors, guide patients about transfusion, detect, communicate and act on transfusion reactions and document the entire process.<sup>3</sup>

Nursing professionals must therefore know how to identify signs and symptoms of transfusion-related reactions and apply the correct care measures in these interurrences. Nursing must be able to act quickly and efficiently so as to guarantee the maintenance of the life of the patient.<sup>4</sup>

The objective of the study was to verify the knowledge of the nursing team about hemotherapy, immediate transfusion reactions and care measures indicated in these cases, in an adult emergency unit of a university hospital in the Center-West region of Brazil.

## METHODOLOGY

This is a descriptive study with quantitative approach. The collection was performed from March 1 to April 1, 2016, and aimed to obtain information about the knowledge of the nursing team on immediate transfusion reactions and correct care to be performed.

The data were collected through a semi-structured questionnaire with objective and subjective questions. The questionnaire was prepared by the authors based on the scientific literature.<sup>1,5-10</sup> Previously to its application, the questionnaire was submitted to be analyzed by the head of the sector, besides being tested with four nurses to check the intelligibility and clarity of the content, as well as the quality of the answers to reach the objectives of this study.

This research was carried out in the adult emergency unit of a university hospital in the Central-West region of Brazil. Data collection began after approval of the research project by the Research Ethics Committee of the Clinical Hospital of the Federal University of Goiás, which occurred on 27.02.2016, under the number CAAE: 52650416.4.0000.5078.

The study population was composed of nurses and nursing technicians who make up the nursing team at the study site and who, after receiving explanation of the research, agreed to participate and signed the Informed Consent Term.

The data collected was inserted into a *Microsoft Office Excel*® 2010 spreadsheet. The results were obtained by tabulating the data in this program, using simple frequency. The discussion was made comparing the results found in this research with the results found in the literature on the subject.

## RESULTS AND DISCUSSION

### PROFILE OF PARTICIPANTS

The sample consisted of 29 participants, divided into nurses and nursing technicians, according to Table 1.

Table 1 - Distribution of participants according to sex, age, education, professional category, time of exercise of the profession and time of exercise at the place of study, from March 1 to April 1, 2016, Goiânia, 2017

Characteristics	n(29)	%
<b>Sex</b>		
Male	7	24
Female	22	76
<b>Age group in years</b>		
18-29	4	14
30-40	5	17
41-50	7	24
51-60	8	28
> 60	4	14
Not informed	1	3
<b>Professional category</b>		
Nursing Technician	21	72
Nurse	8	28
<b>Training time in years</b>		
< 2	3	10.34
2-5	1	3.45
5-10	1	3.45
> 10	24	82.76
<b>Working time in the emergency room in years</b>		
< 2	4	13.79
2-5	1	3.45
5-10	1	3.45
> 10	23	79.31

The most frequent age group (28%) was 51 to 60 years. This can be explained by the fact that more experienced professionals are allocated to the emergency room, where more ability and speed of care is needed. There was a prevalence of the female sex in the sample (76%), which is expected, due to the predominance of women in nursing. The feminization of the nursing team exceeds 90%.<sup>11,12</sup> The largest professional category was that of nursing technicians, also in line with the literature.<sup>8,10</sup> This class is generally larger, as it is the largest contingent of the workforce of the nursing team.

The time of exercise of the profession and of work in the emergency room was similar, both of more than 10 years. This

time can be considered long, since in Brazil a worker has to contribute for at least 30 years in order to retire.<sup>13</sup> Prolonged professional practice time in teaching hospitals can be explained by the hiring regime in force at these institutions, which occurs through public tender. This modality gives stability to the employees, leading them to stay in the institution for longer times.

### PERFORMANCE OF THE NURSING TEAM IN BLOOD TRANSFUSION PROCEDURES

Table 2 shows the number of participants who have already witnessed some type of blood transfusion and if they follow up the procedure.

Table 2 - Participants who had witnessed blood transfusions and followed up the patient during the procedure, from March 1 to April 1, 2016, Goiânia, 2017

Questionnaire	n(29/26)	%
<b>Has witnessed a blood transfusion</b>		
Yes	26	90
No	3	10
<b>Has followed up the patient during blood transfusion</b>		
Yes	17	65.38
No	9	34.61

According to article 1, item "o" and article 3 of Resolution COFEN nº 306/2006, which regulate the work of the nurse in hemotherapy, nurses have the duty "to perform and/or supervise the administration and monitoring of the infusion of blood components and blood products, acting in the case of adverse reactions", and "the duties of mid-level nursing professionals must be developed according to the Professional Exercise Law, under the supervision and guidance of the nurse who is the technical responsible for the Hemotherapy Service or Sector".<sup>3</sup> Resolution COFEN nº 511/201613, which abolishes the Resolution COFEN nº. 306/2006 and approves the Technical Norm that deals with the work of nurses and nursing technicians in hemotherapy, adds that it is the responsibility of the nursing technician:

*To comply with the prescription made by the nurse; to check vital signs in the pre, intra and post-transfusion procedure; to observe and communicate to the nurse any intercurrent; strictly monitor blood or blood products drip; to proceed to record the actions performed, in the patient's chart, in a clear, precise and timely manner; to participate in ongoing education and training programs.<sup>13:7</sup>*

Thus, it is a fundamental role of the nursing team to monitor the patient during blood transfusion, performing their rel-

evant activities. Participants who reported not having had experiences in this practice explained that this is an activity under the responsibility of the blood bank.

At the institution studied, the blood bank is responsible for collecting the patient's blood sample, providing the necessary material and installing the prescribed blood or blood components. However, blood bank technicians do not remain with the patient during the procedure. They leave and the responsibility of monitoring the patient is passed on to the nursing staff, which must be prepared for such activity.

A study carried out in a university hospital in the Triângulo Mineiro to know the participation of professionals in the transfusion practice, found that 100% of the nurses and 63% of the nursing technicians monitored the patients during blood transfusion<sup>8</sup>, thus demonstrating a participating nursing team, in fact more than the one observed in the present survey.

### KNOWLEDGE OF THE NURSING TEAM ABOUT BLOOD TRANSFUSION

When asked about their preparation to follow the patient during a blood transfusion procedure, the majority of the participants (62%) declared themselves prepared to perform this kind of assistance. Regarding the conduct of an immediate transfusion reaction, 66% reported that they feel empowered.

Among the participants who thought they were prepared to monitor the patient during the transfusion procedure and were able to act in an immediate transfusion reaction, 44.44% reported that this is due to their previous theoretical knowledge and practical experience (33.32%). Other participants (18.51%) were considered themselves confident to provide care for a patient during the transfusion procedure and during a transfusion reaction based on the guidelines/prescriptions of doctors and/or nurses. The minority (3.73%) reported not to worry about this matter, because they believe that few patients develop transfusion reactions. It should be noted that this thinking is not appropriate; since there is no risk-free transfusion, and that this attitude can result in serious harm to the patient, including fatal consequences.<sup>1</sup>

Among the participants who thought they were not prepared to follow up the patient during a transfusion procedure or to act before a transfusion reaction, the main reason was the lack of training (61.53%). Other cited causes were absence of previous experience/knowledge (23.07%), and the idea that this activity is under the responsibility of the blood bank (15.38%).

In the present study, 83% of the participants reported having never participated in a course, training and/or capacitation/continuing education in the area of blood transfusion. In a study carried out in a teaching hospital<sup>5</sup>, nursing professionals were questioned about whether they had received training in transfusion practice, and the answer was negative in the case of

46% participants. In turn, 63% nurses answered that they had not received training related to the operation in cases of transfusion reaction. The data found by this author are similar to the information found in the present. In both studies, most of the nursing team never participated in specific training on blood transfusion and immediate transfusion reactions. This vacuum in continuing training may interfere with the care of patients undergoing this type of therapy.

In another study<sup>10</sup>, whose objective was to assert the factors associated with the knowledge of the nursing team about blood transfusion, 88% of the professionals reported that they had received training or guidance from the institution and 60.3% had participated in some specific blood transfusion training program. The author also points out that 92.8% of the professionals felt confident to carry out the transfusion process. After performing a bivariate analysis, the study also showed that professionals who had received training or guidance to perform the transfusion process and/or who had participated in specific training on blood transfusion had a higher knowledge scores in relation to the other professionals.

The cited study allows us to infer that the more informed the professionals are about the procedure and its guidelines, the more confident they will be to carry out the process. This datum demonstrates the importance of preparing the nursing team to perform this activity; preparation based on courses, improvements, implementation of protocols, etc.

Although most of the participants in this study had not undergone any type of training or course, most of them stated that they were prepared to monitor the patient in transfusion therapy and to act in the face of an adverse reaction. This disparity can be attributed to the long exercise of the profession and of performance in the emergency room, which could have led to safety in care. However, this may not necessarily mean that the participants are indeed apt to perform in these cases and that they hold knowledge about this subject.

### KNOWLEDGE ABOUT IMMEDIATE TRANSFUSION REACTIONS

The Table 3 shows the distribution of participants who at some point had already witnessed an immediate transfusion reaction and were able to inform the period of onset of symptoms. Only 28% of the respondents gave the correct answer, namely, during the transfusion and within 24 hours after the start of the blood transfusion.

Table 4 presents the responses given, according to the participants' knowledge, on the signs and symptoms of immediate transfusion reactions. There were no options to be selected in the questionnaire. The total responses were 109. Each participant listed, on average, 3.89 symptoms.

Table 3 - Participants who had witnessed an immediate transfusion reaction and informed the period of onset of symptoms, from March 1 to April 1, 2016, Goiânia, 2017

Questionnaire	n(29)	%
<b>Has witnessed a transfusion reaction</b>		
Yes	23	79
No	6	21
<b>Period of occurrence of immediate transfusion reactions</b>		
Only during blood transfusion	5	17
After blood transfusion and within 24 hours	5	17
During and within 12 hours after the start of blood transfusion	6	21
During and within 24 hours after the start of blood transfusion	8	28
Does not know	5	17

Table 4 - Signs and symptoms of immediate transfusion reactions cited by participants, from March 1 to April 1, 2016, Goiânia, 2017

Signs and symptoms	n	%
Fever	18	62.07
Pruritus	13	44.83
Tremor	11	37.93
Exanthema	10	34.48
Chill	10	34.48
Dyspnea	9	31.03
Change in vital signs	4	13.79
Shaking	3	10.34
Anaphylactic shock	3	10.34
Sweating	3	10.34
Tachycardia	3	10.34
Pain at the access site	2	6.90
Fatigue	2	6.90
Hypothermia	2	6.90
Malaise	2	6.90
Nausea	2	6.90
Blush	2	6.90
Vomiting	2	6.90
Anguish	1	3.45
Cyanosis	1	3.45
Chest pain	1	3.45
Hypertension	1	3.45
Hypotension	1	3.45
Cardiorespiratory arrest	1	3.45
Does not know	1	3.45

The Technical Manual for Investigation of Immediate and Late Non-Infectious Transfusion Reactions of the National Agency of Sanitary Surveillance (ANVISA)<sup>1</sup> highlights the importance of the nursing team in the transfusion process in all

its stages, that is, in before, during and after the procedure. According to this manual, the entire health team should be aware of the correct application of transfusion therapy and the nursing professional must be directly involved in the care of the patient who will be submitted to blood transfusion.

The nursing team does not have the responsibility to make the diagnosis of the immediate transfusion reaction, but it is essential that this be attentive to the infusion, to detect early signs and symptoms suggestive of transfusion reaction. In this way, the in-depth knowledge and the training of the entire nursing team are necessary to recognize the signs of reaction and to act taking the appropriate measures for each type of intercurrentence.

The main signs and symptoms of immediate transfusion reactions are: chest pain, pain in the infusion site, abdominal and flank pain, severe hypotension, fever, tremor (which may be severe), pruritus, hives, erythematous plaques, glottis edema, bronchospasm, anaphylactic shock, back pain, dyspnea, jugular dilatation, cough, gasping at the base of the lungs, abdominal cramps and diarrhea.<sup>1,14-16</sup>

In view of the number of symptoms that can arise in a transfusion reaction, the lack of knowledge of the nursing team in the present study was noticeable, mainly due to the small number of symptoms mentioned by each participant. However, a common symptom present in immediate transfusion reactions, which is fever, was cited quite frequently. Tremor and pruritus, which are also common symptoms, were frequently cited. It is worth mentioning that the lack of training and/or continuing education offered by the institution on this subject has an influence on this result.

Regarding nursing care (Table 5), the most cited by participants were, respectively: interrupting the transfusion (93.10%), communicating the doctor (86.21%), and reporting to the blood bank (48.28%).

Table 5 - Care measures pointed as correct according to the Nursing team in cases of immediate transfusion reactions, in the period from March 1 to April 1, 2016, Goiânia, 2017

Care	n	%
To suspend the transfusion	27	93.10
To communicate the doctor	25	86.21
To report to the blood bank	14	48.28
To communicate the nurse	6	20.69
To maintain open access with 0.9% PS	6	20.69
To apply the prescribed medication	4	13.79
To record in the medical chart	4	13.79
To monitor the patient	1	3.45
To prepare emergency supplies	1	3.45
To search information on the patient's case	1	3.45
To keeping the patient under observation	1	3.45
To check vital signs	1	3.45
Does not know	1	3.45

According to the Technical Manual of ANVISA<sup>1</sup>, the care measures are:

- I. to immediately interrupt the transfusion;
- II. to maintain permeable venous access with 0.9% physiological solution;
- III. to verify at the bedside the identification of the blood component, to check if this has been correctly administered to the patient with due medical prescription and check for errors or exchange;
- IV. to check the vital signs and observe the cardiorespiratory state;
- V. to communicate to the physician responsible for the transfusion;
- VI. to provide a puncture for a second venous access in case of suspicion of serious reaction;
- VII. to communicate the reaction to the hemotherapy service;
- VIII. to collect and send the patient's blood sample to the hemotherapy service together with the blood bag and the equipment, even if the bag is empty;
- IX. to collect and send blood and/or urine samples to the clinical laboratory when indicated by the physician;
- X. to notify the suspicion of reaction to the hemotherapy service and transfusion committee by means of writing;
- XI. to record the actions in the patient's medical chart (pp. 39-40).

The majority of the participants (93.10%) placed the transfusion interruption as the first conduct to be adopted, what is in line with the ANVISA Manual<sup>1</sup>. As for maintaining the patent venous access with PS 0.9%, 20.69% of the participants would take such behavior. Only one participant (3.45%) reported the importance of checking vital signs. This latter conduct should be performed primarily by the nursing team and should be considered one of the most important, since immediate transfusion reactions usually alter these signs. Among participants, 48.28% emphasized the importance of communicating the blood bank, but no participant described as a conduct to be adopted the verification of the blood component, as well as if this was correctly administered; 13.79% of the participants reported that they would record the event in the medical chart.

### FORMULATION OF A PROTOCOL FOR THE MANAGEMENT OF TRANSFUSION REACTIONS

All participants reported that they considered important to undergo training, and the majority (97%) reported that a protocol was necessary. According to them, receiving training and a protocol can promote/provide knowledge (32.65%). As to the formulation of a protocol for the management of immediate transfusion reactions, the participants demonstrated openness and interest, reporting that the implementation of this protocol could standardize/systematize the con-

ducts (16.32%), assist the team in offering qualified assistance (28.57%), besides generating greater safety to the patient and to the professional (22.44%).

A study carried out in a university hospital in Curitiba<sup>7</sup> whose objective was to prepare a nursing protocol for transfusion therapy showed that it is possible to produce protocols, routines and other instruments to systematize nursing care, and that this activity revitalizes the motivation of the nursing workers.

Another study carried out in a public teaching hospital in the Southern region<sup>8</sup>, which aimed to create an instrument of good nursing practices related to care during and after blood transfusion, showed that the use of a protocol is important for decision-making concerning patients receiving blood transfusions.

In the two studies cited, the instruments were built with participation of the team, which led the authors to believe that there would be more awareness and accountability among the professionals involved in the care.

The data found in the present study reveal the need felt by the team regarding training and the elaboration of protocol on the subject. The openness of the team in this matter was also evident, which makes it possible the accomplishment of works related to this theme. It is also worth noting that the recognition of the team regarding the importance of theoretically and technically preparing themselves to correctly assist patients in transfusion therapy is a positive aspect and should be used by the institution in the quest to improve its services.

### CONCLUSION

Most participants (62%) reported feeling prepared to monitor patients during transfusion therapy and 65.38% had the habit of following up the patients during this procedure. When questioned about their preparedness to act before a transfusion reaction, 66% reported that they felt qualified for this activity, but only 17% had participated in training or courses on the subject.

Regarding signs and symptoms of transfusion reactions, few symptoms were mentioned, with a mean of 3.89 per participant. It was also observed that only 28% of the participants were able to inform the period in which these signs may arise. Regarding the conducts that should be taken in the face of immediate transfusion reactions, few answers were in accordance with the guidelines of the Technical Manual for Investigation of Immediate and Late Non-Infectious Transfusion Reactions of the ANVISA.<sup>1</sup>

The nursing team, as a front-line care team, should be technically and scientifically prepared to perform such activity, and recognize that this is an activity inherent to the profession and cannot be passed on to other professionals.

Despite the participants' confidence in performing such activity, the results of the research show little preparation of the team. However, when asked about the need for training

and courses on the subject, as well as the formulation of a protocol, the team was receptive to this idea, in addition to reporting the importance of activities like this.

In view of the above, it is necessary to acknowledge that the nursing professional should always seek more information and be updated. Thus, we can suggest that institutions would favor this learning by recognizing the weaknesses and potentialities of their teams and offering opportunities for the dissemination of knowledge to be materialized through courses, improvements, continuing education and protocol formulation.

This research presents limitations regarding the population studied, which was a limited sample from a single sector of one institution, which may influence the results. It is also worth noting the need for further research to deepen the subject, carried out in other sectors, seeking to foster reflections on the subject.

## REFERENCES

1. Agência Nacional de Vigilância Sanitária (BR). Hemovigilância: manual técnico para investigação das reações transfusionais imediatas e tardias não infecciosas. Brasília: Anvisa; 2007.
2. Agência Nacional de Vigilância Sanitária (BR). Resolução RDC nº 153, de 14 de junho de 2004. Determina o regulamento técnico para os procedimentos hemoterápicos, incluindo a coleta, o processamento, a testagem, o armazenamento, o transporte, o controle de qualidade e o uso humano de sangue, e seus componentes, obtidos do sangue venoso, do cordão umbilical, da placenta e da medula óssea. Brasília: ANVISA Publicações Eletrônicas; 2004.
3. Conselho Federal de Enfermagem. Resolução COFEN nº 306/2006, de 25 de abril de 2006. Normatiza a atuação do Enfermeiro em Hemoterapia. Brasília: Conselho Federal de Enfermagem; 2006.
4. Barbosa SM, Torres CA, Gulbert FA, Pinheiro PNC, Vieira NFC. Enfermagem e a prática hemoterápica no Brasil: revisão integrativa. *Acta Paul Enferm.* 2011[cited 2016 Nov 15];24(1):132-6. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0103-21002011000100020](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002011000100020).
5. Barbosa HB, Nicola AL. Enfermagem na terapia transfusional e hemovigilância: análise da conformidade em um hospital de ensino. *Saúde (Santa Maria).* 2014[cited 2016 Nov 15];40(2):97-104. Available from: <https://periodicos.ufsm.br/revistasaude/article/view/13074>.
6. Ferreira O, Martinez EZ, Mota CA, Silva AM. Avaliação do conhecimento sobre hemoterapia e segurança transfusional de profissionais de enfermagem. *Rev Bras Hematol Hemoter.* 2007[cited 2016 Nov 15];29(2):160-7. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1516-84842007000200015](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-84842007000200015).
7. Gonçalves ACS, Said FA. No processo de educação continuada, a construção de um protocolo assistencial de enfermagem à terapia transfusional: relato de experiência. *Rev Eletrônica Fac Evang.* 2011[cited 2016 Nov 27];1(2):12-30. Available from: <http://www.fepar.edu.br/revistaeletronica/index.php/revfepar/article/view/22/35>
8. Silva KFN, Soares S, Iwamoto HH. A prática transfusional e a formação dos profissionais de saúde. *Rev Bras Hematol Hemoter.* 2009[cited 2016 Nov 15];31(6):421-6. Available from: <http://www.fepar.edu.br/revistaeletronica/index.php/revfepar/article/view/22>.
9. Gabriela FS, Eliane RPN, Daniele DL, Adilson AB, Walnice I, Katia CB. Boas práticas de enfermagem na unidade de terapia intensiva: cuidados durante e após a transfusão sanguínea. *REME - Rev Min Enferm.* 2014 [cited 2016 Nov 15];18(4):939-46. Available from: <http://www.reme.org.br/artigo/detalhes/974>.
10. Tavares JL, Barichello E, Mattia ALD, Barbosa MH. Fatores associados ao conhecimento da equipe de enfermagem de um hospital de ensino sobre hemotransfusão. *Rev Latino-Am Enferm.* 2015[cited 2016 Nov 15];23(4):595-602. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0104-11692015000400595&lng=en&nrm=iso&tIng=pt](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692015000400595&lng=en&nrm=iso&tIng=pt).
11. Machado MH, Vieira ALS, Oliveira E. Construindo o perfil da enfermagem. *Enferm Foco.* 2012[cited 2016 Nov 15];3(3):119-22. Available from: <http://revista.portalcofen.gov.br/index.php/enfermagem/article/view/294>.
12. Congresso Nacional (BR). Lei nº 13.183, de 4 de novembro de 2015. Altera as Leis nºs 8.212, de 24 de julho de 1991, e 8.213, de 24 de julho de 1991, para tratar da associação do segurado especial em cooperativa de crédito rural e, ainda essa última, para atualizar o rol de dependentes, [...] e a Lei nº 7.998, de 11 de janeiro de 1990; e dá outras providências. Brasília, 4 de novembro de 2015; 194º da Independência e 127º da República.
13. Conselho Federal de Enfermagem. Resolução COFEN nº 511/2016, de 31 de março de 2016. Aprova a Norma Técnica que dispõe sobre a atuação de Enfermeiros e Técnicos de Enfermagem em Hemoterapia. Brasília: COFEN; 2016.
14. Wendel Neto S. Reações adversas das transfusões. In: Verrastro T. *Hematologia e Hemoterapia: fundamentos de morfologia, fisiologia, patologia e clínica.* São Paulo: Atheneu; 2005. p.279-89.
15. Hoffbrand AV, Moss PAH. Transfusão de Sangue. In: Hoffbrand AV, Moss PAH. *Fundamentos em hematologia.* 6ª ed. Porto Alegre: Artmed; 2013. p. 398-412.
16. Sahu S, Hemlata A, Verma A. Adverse events related to blood transfusion. *Indian J Anaesthesia.* 2014[cited 2016 Nov 15];58(5):543-51. Available from: <http://www.ijaweb.org/text.asp?2014/58/5/543/144650>.
17. Souza GF, Nascimento ERP, Lazzari DD, Böes AA, Lung W, Bertoncello KC. Boas práticas de enfermagem na unidade de terapia intensiva: cuidados durante e após a transfusão sanguínea. *REME - Rev Min Enferm.* 2014[cited 2016 Nov 15];18(4):939-46. Available from: <http://www.reme.org.br/artigo/detalhes/974>.