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Nursing in the context of hemotherapy: safety for patients

Enfermería en el contexto de la hemoterapia: seguridad para los pacientes

A enfermagem no contexto da hemoterapia: a segurança ao paciente

ABSTRACT

Objective: To describe the nurses' knowledge regarding hemotherapeutic practices and patient safety in the process. **Methods:** Descriptive study, with a direct and qualitative approach, with 20 nurses from a medium-sized private hospital in the municipality of Divinópolis, Minas Gerais. It was carried out from August 2018 to September 2018 with the application of a questionnaire. **Results:** From the analysis of the responses of the research participants, it was possible to create four thematic categories; Transfusion practices: training, updates and forms that assist in blood transfusion; Checking the information needed to perform the transfusions; Monitoring the patient in the transfusion process; Adverse reactions and notification. **Conclusion:** The study showed professionals aware of the importance of the procedure, but there were flaws in some of the themes, seeing the need for updating, training and further research in the area, in order to seek patient safety and quality of care.

DESCRIPTORS: Hemotherapy service; Patient safety; Blood transfusion.

RESUMEN

Objetivo: Describir el conocimiento de las enfermeras sobre las prácticas hemoterapéuticas y la seguridad del paciente en el proceso. **Métodos:** Estudio descriptivo, con enfoque directo y cualitativo, con 20 enfermeras de un hospital privado de tamaño mediano en el municipio de Divinópolis, Minas Gerais. Se realizó entre agosto de 2018 y septiembre de 2018 con la aplicación de un cuestionario. **Resultados:** Del análisis de las respuestas de los participantes en la investigación, fue posible crear cuatro categorías temáticas; Prácticas de transfusión: capacitación, actualizaciones y formularios que ayudan en la transfusión de sangre; Verificar la información necesaria para realizar las transfusiones; Monitoreo del paciente en el proceso de transfusión; Reacciones adversas y notificación. **Conclusión:** El estudio mostró a los profesionales conscientes de la importancia del procedimiento, pero hubo fallas en algunos de los temas, al ver la necesidad de actualización, capacitación e investigación adicional en el área, a fin de buscar la seguridad del paciente y la calidad de la atención.

DESCRIPTORES: Seguridad del paciente; Servicio de hemoterapia; Transfusión de sangre.

RESUMO

Objetivo: Descrever o conhecimento dos enfermeiros no que se refere às práticas hemoterápicas e a segurança do paciente no processo. **Métodos:** Estudo descritivo, de abordagem direta e de caráter qualitativo, com 20 enfermeiros de um hospital privado de médio porte do município de Divinópolis, Minas Gerais. Foi realizado no período de agosto de 2018 a setembro de 2018 com aplicação de questionário. **Resultados:** A partir da análise das respostas dos participantes da pesquisa foi possível a criação de quatro categorias temáticas; Práticas transfusionais: treinamentos, atualizações e impressos que auxiliem na hemotransfusão; Checagem das informações necessárias para realização das transfusões; Monitorização do paciente no processo transfusional; Reações adversas e notificação. **Conclusão:** O estudo evidenciou profissionais cientes da importância do procedimento, porém observou-se falhas em alguns dos temas, vendo-se a necessidade de atualização, treinamentos e maiores pesquisas na área, a fim de buscar a segurança do paciente e qualidade do atendimento.

DESCRIPTORES: Segurança do paciente; Serviço de hemoterapia; Transfusão de sangue.

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Daniela Ribeiro Lopes

Nurse. Graduated in Nursing from the State University of Minas Gerais (UEMG), Divinópolis Unit.
ORCID: 0000-0002-1968-9114

Isabela Ribeiro Gontijo

Nurse. Graduated in Nursing from the State University of Minas Gerais (UEMG), Divinópolis Unit.
ORCID: 0000-0002-2281-481X

Marla Ariana Silva

Nursing student at the State University of Minas Gerais (UEMG), Divinópolis Unit.
ORCID: 0000-0003-0136-7122

Fernanda Marcelino de Rezende e Silva

Nurse. PhD student in Health Sciences at the Federal University of São João Del Rei (UFSJ), Campus Centro Oeste Dona Lindu (CCO). Professor and Coordinator of the Undergraduate Nursing Course at the State University of Minas Gerais (UEMG), Divinópolis Unit.
ORCID: 0000-0003-2236-7009

Silmara Nunes Andrade

Nurse. PhD in Health Sciences from the Federal University of São João Del Rei (UFSJ), Campus Centro Oeste Dona Lindu (CCO). Professor of the Nursing Graduation Course at the State University of Minas Gerais (UEMG), Divinópolis Unit.
ORCID: 0000-0002-1975-0827

Regina Consolação dos Santos

Nurse. Master in Science from the Federal University of São João Del Rei (UFSJ), Campus Centro Oeste Dona Lindu (CCO). Professor of the Nursing Graduation Course at the State University of Minas Gerais (UEMG), Divinópolis Unit. Professor and coordinator of the Nursing course at the Itaúna University (UIT), Minas Gerais.
ORCID: 0000-0002-7393-3210

INTRODUCTION

Hemotherapy is a dynamic and complex process based on Law No. 10,205, of March 21, 2001, which establishes the stages of the blood cycle, namely: collection, processing, storage, distribution and application of blood. ⁽¹⁾ After the collection of the whole blood, it is sent to the fractionation sector, for a centrifugation and fractionation process, in which blood components (red blood cells, platelet concentrates and fresh frozen plasma) will be obtained. All bloods undergo serological tests to detect pathogens in order to prevent disease transmission. ⁽²⁾

In hospital institutions, the component most used in transfusions is red blood cell concentrate (RBC), a blood component obtained by fractionating a bag of whole blood and whose main indication is to improve the oxygenation of the body's tissues ⁽³⁾.

For the proper functioning and guarantee of a safe process, norms and laws issued by the Brazilian health authorities are used, in order to guarantee the maximum patient safety and service quality. ⁽⁴⁾

In Brazil, blood therapy practices are currently regulated by Ordinance No. 158, of February 4th, 2016, which redefines the technical regulation of blood therapy procedures. ⁽⁵⁾

Even if it is a process that follows norms and indications, hemotherapy can cause possible incidents, even after all the requirements and constant monitoring have been carried out, and must be done under safe conditions, by trained professionals, with the necessary resources, in order to avoid possible complications. ⁽⁶⁾

Thus, it is essential that nurses have extensive knowledge and technical skills, based on ethics, scientific basis and commitment to the health of individuals, favoring the reduction of errors and ensuring transfusion safety. ⁽⁷⁾

The nursing team performs its duties according to the provisions of specific legislation guided by Law No. 7.498, from June 25th, 1986, and Decree No. 94.406, from June 8th, 1987, which regulates the exercise of Nursing in the country. It is also emphasized that nurses are responsible for nursing care of greater technical complexity and that demand adequate

scientific knowledge and the ability to make immediate decisions. ⁽⁸⁾

The Resolution of the Federal Nursing Council (COFEN) No. 306/2006, establishes as nurses' competences: "planning, execution, coordination, supervision and evaluation of hemotherapeutic and nursing procedures in the units, aiming to ensure the quality of blood and blood components / blood products collected and transfused". ⁽⁹⁾

The nurse, together with the team, has a prominent role for performing communication and direct dialogue with the patient and for acting directly in care, and for this reason, he must seek means and actions that guarantee and promote patient safety. The International Classification of Patient Safety defines 'patient safety' as the act of avoiding, preventing or improving adverse outcomes or injuries arising from the hospital medical care process. ⁽¹⁰⁾

Taking into account that this is a procedure that, when performed incorrectly, can have serious consequences and even offer a risk of death, this study was justified by the relevance of the theme and the important participation of nursing in the area, in addition to having enab-

led scientific production on the theme and training for performance. Therefore, the study presents the following guiding question: Does the nurse who works directly with hemotherapy practices have technical and scientific skills to ensure patient safety?

The objective of this study is to describe the nurses' knowledge regarding hemotherapeutic practices and patient safety in the process.

METHODS

This is a descriptive study, with a direct and qualitative approach. The research sought to describe and analyze the knowledge of the professionals in a faithful manner, with a decomposition of the data and in the interpretation, meanings were sought in the speeches and actions to reach an understanding or explanation beyond that described.⁽¹¹⁾ The theoretical saturation method was also used, in which the inclusion of new participants was suspended when the data collection started to show redundancy or repetition in the researcher's assessment.⁽¹²⁾

The study was carried out in a medium sized Private Hospital Institution of reference in the municipality of Divinópolis, Minas Gerais. The total sample was 25 participants, however, only 20 nurses participated, including supervisors and assistants. Five nurses refused to participate. The main issue was professionals working in the field and who had direct contact with patients undergoing transfusion therapy. Exclusion criteria were not interviewed nurses in training (introductory training), maternity / medical leave, nurses who work in sectors without transfusion practice and who refused to participate in the research.

The data collection stage was carried out between August and September 2018, being operationalized through the application of a questionnaire to acquire information. The participants were asked to answer the questions, which was applied according to the availability of the participants. At the time of contact,

the purpose of the study was clarified and also regarding the way it was conducted. At the time of collection, some nurses refused to participate because they were busy and the data collection of the night team was not made available by the institution.

The data obtained through the questionnaire were transcribed, analyzed and based on studies, the responses were interpreted. The material was thoroughly analyzed and its responses gave rise to categories and themes that will answer the guiding question.

This study complied with Resolution CNS/CONEP 466 from December 12th, 2012, which approves the guidelines and standards for research involving human beings (13). The data were only collected after the research was approved by the Research Ethics Committee of the State University of Minas Gerais (COEP/UEMG), approved with CAAE number: 94514218.4.0000.5115.

When the questionnaire was applied, the Free and Informed Consent Term (ICF) was made available for reading and signing, and it was also signed, in two copies of the same content. To maintain confidentiality, codes were used to identify professionals, for example: E1, with the objective of defending the interests of research participants in their integrity and dignity.

RESULTS

The study counted on the participation of 20 nurses and with the analysis of the answers it was possible to organize the data in 5 thematic categories: Transfusion practices: training, updates and forms that assist in blood transfusion; Knowledge of professionals regarding the care with the packed red blood cell (RBC) bag; Checking the information needed to perform the transfusion; Monitoring the patient in the transfusion process; Adverse reactions and notification.

Transfusion practices: training, up-

dates and forms that assist in blood transfusion

The first category included questions related to the professional's preparation for carrying out the transfusion practice, with the first topic being the training offered by the institution.

We are always in training, focused on practice when it is necessary and there are doubts. (E2)

Yes, the training is quite frequent. (E1).

Yes, about 3 times a year. (E7)

The second theme was directed to the team's knowledge about a form that instructs the professional at the time of performing the procedure, which in this institution is called Work Instruction (Instrução de Trabalho - IT). The professionals demonstrated awareness of the existence of IT and awareness of its importance, since it significantly minimizes risks to the patient and in times of doubt prevents professionals from carrying out procedures with insecurity.

Yes; whenever there are doubts, seek your knowledge to perform the procedure. (E2)

Yes, IT is important because it helps to resolve possible doubts that may arise during the procedure (E6).

Yes to standardize, avoid errors and promote patient safety (E11).

Knowledge of professionals regarding the care of the RBC bag

In this category, we sought to observe aspects related to the care with the CH bag. In the first topic, it was questioned the maximum time that it can be out of the refrigerator before the start of its administration. The interviews revealed that most professionals have an erroneous idea about time, which increases the chances of procedures that can cause damage to health.

10 to 5 minutes acclimated (E1).

3 hours (E3).

*From 30 to 40 minutes (E6).
5 minutes (E12).
For 4 hours (E14).*

In the second theme, he asked the professionals the maximum, minimum and ideal transfusion time. It was demonstrating, in its totality, knowledge, concern and attention of the professionals for this stage of the procedure.

Maximum 4 hours and minimum 2 hours (E2).

Minimum time of 2 hours to avoid acute lung edema, cardiac overload. Maximum time of 4 hours to avoid bacterial contamination (E7).

Yes, 24 drops. After 10 minutes it changes to 48 drops (E16).

Checking the information needed to perform the transfusion

In the third category, we raised this check and confrontation of the information contained in the bag and on the label before the start of the transfusion. The first topic was about double checking information, who does it and what information should be taken into account.

A double check is carried out with nurses or nursing technicians, checking the name and blood type (E10). With data from the medical record, patient identification, such as name, blood type, components that are being transfused (E11).

Supervision goes to the transfusion agency, checks the bag, card and registration book. Then, in the sector, the supervision checks again with the professional and the two sign on the card and on the registration sheet (double check) (E14).

The second topic was directed to the information that should be questioned to the patient (when possible) at the bedside and compared to the bag at the exact moment of blood installation before the start of the transfusion.

Check the patient's identification plate, and check if it really is him (E2). Medical prescription such as: full name, age, mother's name, medical record number, bag number, blood components, ABO and RH from the donor, number of bags prescribed and responsible for dispensing (E5). Name of the patient, if he has had a blood transfusion before (E11). Patient's name, bed, registration number, date of birth and date (E14)

In the clippings it is evident that the name is always questioned to the patient and some of the employees mentioned asking for other information such as blood type, important attitudes that minimize errors in addition to giving confidence and tranquility to the patient.

Monitoring the patient in the transfusion process

At this stage, we sought to question the professionals regarding this supervision, evaluation and note of the patient's vital signs during the transfusion process. We know that the verification of vital signs guarantees a better assessment of the patient, avoids complications and its annotation provides support to professionals in different situations. The first topic is about checking vital signs before and after the start of the transfusion and what is the ideal time for this check.

Yes, at the time of the transfusion. Alert for fever (E2).

Yes, before removing the bag from the refrigerator, before the transfusion and 10 minutes after starting the transfusion (E4).

Yes, check as soon as you start (E5). Measure to start, 10 minutes after start and at the end or if necessary because they are monitored at the ICU (E6).

Monitoring during the course of the transfusion is also mentioned in the Con-

solidation Ordinance and was an issue that was raised to professionals. In this topic, we ask professionals to pay attention during this monitoring.

Yes. Attention should be paid to the increase in temperature, heart rate, respiratory rate and marked variations in blood pressure (E3). Vital signs and any reaction presented during and after blood transfusion (nausea, vomiting, erythema, dyspnoea and tachycardia) (E8).

Yes, you should check your heart rate, respiratory rate, level of consciousness, if he is not going to experience any urticaria, pruritus, hypotension or hypertension, saturation level, among others. Always pay attention to venous access, caliber, hyperthermia (E14).

As previously mentioned, the evolution of nursing guarantees a safe evaluation of the patient and support for professionals, therefore, institutions must require all staff updated with all the procedures performed, including the administration of blood components. This topic presents clippings from the professionals' responses regarding this evolution in the forms and medical records.

Yes, in the printed form and in the nursing evolution, in addition to checking the medical prescription (E5).

Yes, nursing evolution and RQ488, which is the transfusion registration form (E8).

Adverse reactions and notification

The questions asked in this category sought to question the participants regarding transfusion reactions and their conduct and the first topic asked whether the interviewed professionals feel prepared for the early identification of reactions. The answers obtained made us question, in a negative way, the preparation of the professionals and a certain disregard for the topic in question.

*You know how to identify when you follow your transfusion (E2).
Yes, and to act (E5).
Some, yes (E13).*

In the second theme, it was asked whether the professionals were aware of the existence and importance of FEAT (notification form and investigation of immediate and late non-infectious transfusion adverse events). It is noticed that many professionals are aware of FEAT and its importance.

*Yes, it helps to identify any immediate or late incidents. In order to avoid damage to the client's health (E10).
Yes, because if there is any reaction, this form contains all the necessary data that can be performed on the donor (E14).*

Yes. The importance to investigate what caused a reaction in the client, reasons and facts (E15).

In the third theme of the category, it was asked about filling the FEAT in cases of an adverse reaction. This is information that should be known to the entire team, so that the correct continuity of the service is given at this time.

*The responsible supervisor (E1).
Sector nurse or coordinator (E9).
The professional responsible for the procedure, or responsible doctor (E13).*

DISCUSSION

The subject of patient safety has been highlighted and constitutes a major health challenge. ⁽¹⁴⁾ Risks are part of the service and are linked to several factors, such as the lack of training. ⁽¹⁶⁾ COFEN Resolution no. 306/2006 highlights that the nurse is responsible for providing conditions for the improvement of professionals through courses, training and updates in addition to developing research related to hemotherapy and printed materials that standardize the procedure in the

institution in order to provide a safer and more reliable service. ⁽¹⁶⁾

According to Junior e Rattner ⁽¹⁷⁾, transfusion practices are currently safe practices, however small failures can pose risks to patients' health, such as processing, storing and administering blood in a time and environment that could compromise its sterility. In order to ensure patient safety, it is necessary to ensure that the start of the transfusion does not exceed 30 minutes after receiving the bag, as improper handling of the product and excessive exposure to room temperature can increase the risk of damage. ⁽⁸⁾

The performance of blood transfusion has two distinct moments of checking that seeks to minimize the chance of errors such as, exchange of bag, validity and blood incompatibility. ⁽¹⁸⁻¹⁹⁾ The prevention of accidents during the transfusion process begins with checking the information contained in the bag label and with the correct identification of the patient. According to Mattia ⁽²⁰⁾, nursing not only performs the administration, but must also know its indications, perform the data check correctly and be prepared to guide the patient during the transfusion.

However, Tavares ⁽²¹⁾ in another study, it emphasizes the importance of the nursing team in paying attention to the correct installation of blood, without errors in identification, performing the double check, knowing the indications for transfusions, guiding patients on the procedure and attending to adverse reactions related to transfusion.

Consolidation Ordinance No. 5 of HM in Art. 19 ⁽⁸⁾ declares that the recipient must be identified immediately before the transfusion by means of his / her full name, provided by the recipient or by a team professional and that there must be other mechanisms for this identification, such as bracelets / bracelets in cases of disabled patients. The suspension of transfusion is highlighted when information errors are identified.

According to Ribeiro ⁽²²⁾, monitoring the patient during the transfusion can

be considered as the most important step, as it is there that changes and alterations can be observed and that is why it demands the greatest commitment and attention. The nursing team plays an important role at this stage because it is responsible for the administration of blood components and supervision during the procedure.

Article 190 of Consolidation Ordinance No. 5 of HM ⁽⁸⁾ advises that the patient must have his vital signs (temperature, blood pressure and pulse) all checked and recorded immediately before the start and after the end of the transfusion and the patient must be accompanied by a trained doctor / professional during the first 10 minutes. These records must contain date, time of beginning and end of the infusion, as well as vital signs before during and after, identification of the blood components and responsible professional bags, monitoring data in the first 10 minutes and during the course of the transfusion act. ⁽²³⁾

Transfusion reactions are disorders that can occur during or after blood transfusion, with signs and symptoms noticed right at the beginning of the transfusion or up to 24 hours after the procedure ⁽²⁰⁾. These reactions require immediate action, decision making and priority setting in order to minimize damage and discomfort. ⁽²⁴⁾

CONCLUSION

Fragility, mismatches and lack of knowledge were observed in some of the topics covered, highlighting the need for updating and periodic training in order to enrich these professionals with scientific and technical knowledge to carry out a quality procedure and thus guarantee the safety of patient. As it is a procedure that can pose a health risk, there is a need for further studies and research in the area, in order to bring more knowledge to professionals making them able to deal with the different situations of the procedure. ■

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