INFORMATIONAL ARTICLE

TRANSFUSION OF BLOOD COMPONENTS IN ELDERLY PATIENTS: NURSING CARE

TRANSFUSIÓN DE HEMOCOMPONENTES EM PACIENTES IDOSOS: CUIDADOS DE ENFERMAGEM

ABSTRACT

Objective: to identify the priority nursing care for the elderly people during the transfusion process. Method: we have conducted consultations to documents of the Brazilian Ministry of Health and books on the issue at stake. The bibliographic survey took place between January and February 2013. Results: the performance of the nursing professional and of other members of its team, during the transfusion process in the elderly people, is didactically divided into three major phases: Pre-transfusion, Transfusion and Post-transfusion. The nursing professional performs a variety of specific procedures for each phase, in order to provide a safer transfusion. Conclusion: the clinical assessment of the elderly, by the nursing professional, when performing a good anamnesis and a suitable physical examination, avoids or minimizes the transfusion risks. Therefore, it is crucial that the nursing professional holds scientific knowledge to supervise and guide its team, informing users and their family members about the whole transfusion process, thus ensuring greater safety and a quality care to the elderly population. Descriptors: Nursing; Hemotherapeutic Service; Blood Transfusion; Elderly’s Health.

RESUMO

Objetivo: identificar os cuidados de enfermagem prioritários em idosos durante o processo transfusional. Método: foram realizadas consultas a documentos do Ministério da Saúde e livros sobre a temática em estudo. O levantamento bibliográfico ocorreu entre janeiro e fevereiro de 2013. Resultados: a atuação do enfermeiro e dos demais membros da sua equipe, durante o processo transfusional em idosos, está didaticamente dividida em três importantes fases: Pré-transfusional, a Transfusional e a Pós-transfusional. O enfermeiro realiza diversos procedimentos específicos de cada fase, tendo em vista a segurança transfusional. Conclusão: a avaliação clínica do idoso, pelo enfermeiro, ao realizar uma boa anamnese e um exame físico detalhado, evita ou minimiza riscos transfusinais. Por isso, é fundamental que o enfermeiro detenha conhecimento científico para supervisionar e orientar sua equipe, informando aos usuários e seus familiares sobre todo o processo transfusional, garantindo assim maior segurança e uma assistência qualificada à população idosa. Descritores: Enfermagem; Serviço de Hemoterapia; Transfusão de Sangue; Saúde do Idoso.

RESÚMEN

Objetivo: identificar los cuidados de enfermería prioritarios en ancianos durante el proceso transfusional. Método: fueron realizadas consultas a documentos del Ministerio de Salud y libros sobre la temática en estudio. El levantamiento bibliográfico ocurrió entre enero y febrero de 2013. Resultados: la actuación del enfermero y de los demás miembros de su equipo, durante el proceso transfusional en ancianos, está didácticamente dividida en tres importantes fases: la Pre-transfusional, la Transfusional y la Post-transfusional. El enfermero realiza diversos procedimientos específicos de cada fase, teniendo en vista la seguridad transfusional. Conclusión: la evaluación clínica del anciano, por el enfermero, al realizar una buena anamnesis y un examen físico detallado, evita o minimiza riesgos transfusionales. Por eso, es fundamental que el enfermero tenga conocimiento científico para supervisar y orientar a su equipo, informando a los usuarios y sus familiares sobre todo el proceso transfusional, garantizando así mayor seguridad y una asistencia calificada a la población anciana. Descriptores: Enfermería; Servicio de Hemoterapia; Transfusión de Sangre; Salud del Anciano.

Nurse. Master in Nursing, Universidade Federal do Rio Grande do Norte/UFRN. Natal (RN), Brazil. E-mail: hevan33@ol.com.br; Nurse. Master in Nursing, Universidade Federal do Rio Grande do Norte/UFRN. Natal (RN), Brazil. E-mail: ana.michele@parrm.com; Nurse. PhD in Nursing, Professor at the Post-Graduation and Graduation Nursing Program, Universidade Federal do Rio Grande do Norte/UFRN. Natal (RN), Brazil. E-mail: clelia.missonnio@hotmail.com; Nurse. PhD student in health sciences by Universidade Federal do Rio Grande do Norte/UFRN. Master Teacher of nursing degree at the University College of Sciences, culture and extension of Rio Grande do Norte/UNIFACEX. Natal (RN), Brazil. E-mail: a.estrzakul@com.br; Nurse. Post-Graduation’s Student in Occupational Nursing. Academic Student at the Graduation Course in Management of Health Systems and Services Universidade Federal do Rio Grande do Norte/UFRN. Natal (RN), Brazil. E-mail: allamaropo@yahoo.com.br

English/Portuguese

J Nurs UFPE on line., Recife, 7(spe):5774-9, Sept., 2013
INTRODUCTION

The advancement of medicine, the technological apparatus, as well as the investment in public health are provoking a change in the age structure of the population, thus increasing the number of elderly individuals. This happening requires intense changes in the way of thinking and living the old age in the contemporary society. The benefits acquired by the elderly population have been significant, among which we might cite the Elderly Statute as a legal tool and central reference to the social movement, guiding and encouraging the creation of public policies for meeting their needs. According to the Elderly Statute, a person is considered old when has an age equal or over 60 (sixty) years.

Due to the biological decline inherent in the aging process, health is configured as a central element for the elderly people, since it has a strong impact on the perception of quality of life thereof. It is understood that aging is strongly associated with illness and dependence on specialized care and treatments, which are accepted as necessary and unavoidable in this life stage. Thus, we could cite the Chronic Non-communicable Diseases (NCDs), such as hypertension, diabetes and heart disease, as the most prevalent diseases in the elderly, generating a great demand for healthcare professionals, especially for those belonging to the field of nursing who continuously deal with such subjects.

From the 1960s, it is possible to observe some changes in the epidemiologic profile of diseases that affect the Brazilian population, in other words, the infectious and parasitic diseases are no longer the leading cause of death, being replaced by diseases of the circulatory system and by the neoplasms. This period became known as epidemiological transition and was characterized by a progressive increase in the mortality rate due to NCDs. Currently, factors such as population aging, intense process of urbanization and industrialization, high levels of stress of modern life and consequent exposure of individuals to carcinogenic risk factors have significantly contributed to this growth.

Many diseases can lead the elderly to have the need of using blood and its components as important therapeutic resources for its recovery, mainly in cases of cancer, congenital narrow aplasia, acute or chronic anemias, among others. Nevertheless, the indication, prescription and administration of blood components in the elderly people require special attention due to the additional risks of cardiocirculatory overload.

The blood components are products obtained from the whole blood by means of physical processes (centrifugations, differential freezes or they both) performed in hemotherapeutic units. The blood components are Concentrations of Erythrocytes, i.e., red blood cells (CE), Fresh Frozen Plasma (FFP), Platelet Concentrate (PC) and Cryoprecipitate (Cryo).

The indication of a blood transfusion in the elderly patient is basically equal to the other shares conducted in users of healthcare services, in which the doctor should always assess whether the benefits outweigh the risks, because, despite all advances of the hemotherapeutic medicine, none blood transfusion is exempt from risks. In elderly patients, the doctors should assess some criteria such as the red blood cell count, the blood component type, the quantity, the speed and the time interval among the infusions. Furthermore, medications destined to be administered before and after transfusion should be prescribed according to the individual and clinical needs of the elderly population.

The transfusion process is the infusion of whole blood or of a blood component from a donor to a receiver, with a view to meeting the organic needs of oxygen transport or even to correcting the coagulation disorders. This therapeutic approach, occasionally, acquires vital functions, because, many diseases might cause blood loss or decreased production of red blood cells and of platelets. Hence, each user should have its own individualized plan, assessing its clinical condition and the need or otherwise for using such a component.

As the administration of blood components is a competency of the nursing staff, it becomes necessary to adopt security measures and transfusion nursing protocols, in order to minimize the potential risks of this therapeutic towards the elderly population.

Based on the aforementioned context, we have formulated the following questioning to guide the development of this research: What are the main nursing care procedures to assist elderly people subjected to a blood transfusion?

With a view to answering the research question, this present study aimed at identifying the priority nursing care for the elderly population.
METHOD

This is an informative paper on the nursing care during the transfusion process. It was conducted from consultations to official documents of the Brazilian Ministry of Health and textbooks on the issue at stake. Moreover, the literature review was held in the months of January and February 2013.

After a thorough reading of the selected stuff, we performed the organization of results in a descriptive manner, in order to answer the guiding question of this research.

RESULTS AND DISCUSSION

The work of the nursing professional and of other members of its team, during the transfusion process, didactically is divided into three major phases or steps, as provided in Figure 1:

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities of the nursing professional and of its team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-transfusion</td>
<td>Procedures performed before the transfusion.</td>
</tr>
<tr>
<td>Transfusion</td>
<td>Procedures performed during the transfusion process.</td>
</tr>
<tr>
<td>Post-transfusion</td>
<td>Procedures performed after the transfusion.</td>
</tr>
</tbody>
</table>

Figure 1. Distribution of nursing activities in phases or steps of the transfusion process. 2013.

In the pre-transfusion phase, the nursing professional should perform several procedures that are started with the conference of patient data in the request form for the blood component, where, necessarily, should have the patient's full name, the registration number of the hospital institution and of the card of the Brazilian Unified Health System (SUS), type, quantity and indication of transfusion, followed by signature and stamp of the requesting doctor.6

Still in this phase, the nursing professional should perform other procedures so that the transfusion might be conducted with safety. In addition, checking if the elderly has multiple signs of transfusions and whether reactions have already previously occurred, because, this information is crucial to prevent and minimize the occurrence of other reactions. In the pre-transfusion anamnesis, the nurse should investigate the existence of comorbidities such as: arterial hypertension, heart diseases, degree of anemia, among others.

The physical examination should be directed, taking into account the presence of edemas, jugular veins swelling, breathing patterns, as well as signs of pulmonary congestion, as classic signs that show the occurrence of volume overload. In addition to the above mentioned, assessing the vital signs, with emphasis on body temperature, making a medical record and, in case of amendments, requiring a medical evaluation. This simple information will guide the proper time and speed of infusion for each patient, respecting the maximum time indicated for each blood component, as provided in Table 2. Furthermore, the nursing professional should review the medical prescription and check whether there are drugs to be administered before the transfusion, in order to appoint them in a timely manner.6,9
Transfusion of blood components in...

The second phase or transfusion step begins upon receipt of the blood component. At this point, it is fundamentally important to observe the venous access and, in its absence, or whether it is not suitable for transfusion, one should provide a new access before installing the suitable line for transfusion in the bag of the blood component, since after opening the system, one can determine the beginning of the time validity count. The importance of this care is due to the fact that most older people have capillary fragility and difficulty of caliber peripheral venipuncture, often resulting in the suspension of the procedure.6-9 10

After confirming access, the nurse should check the label information of pre-transfusion tests in the bag of blood components, which contains the data referring to the elderly patient, confirming the ABO and Rh compatibility, especially in transfusion of erythrocyte components. Moreover, inspecting the product, through observation of changes, checking the volume contained in the bag and the validity, as well as checking if the requested blood component appears in the medical prescription, because, according to the Ordinance nº 1.353 of the Brazilian Ministry of Health (MS), the blood transfusion might only be held by means of medical prescription. When the prescription is confirmed, one should install the blood component, confirm with the elderly itself or with its caregiver, the full name and blood type; guide it when there are probable transfusion reactions, immediately notifying the nursing staff about any signs or symptoms that might appear after starting the transfusion, in order to take suitable conducts.9

After installing the blood component, one should start the infusion in a slow way, closely observing the patient in the first 15 minutes of the transfusion, because the most severe reactions usually begin early. Next, one should do registration in the medical chart, describing changes observed in the physical examination, time of beginning and completion of the infusion, bag’s number, administered volume, vital signs and any other observed alteration, as well as the conducts that were adopted, followed by the signature of the responsible for the installation and follow-up of the transfusion.6-7 8-10

Transfusion is an irreversible procedure which is translated into many benefits, but it can also offer some risks. Among these, it should be mentioned the Transfusion Reactions (TR), defined as any complications that occur as a result of transfusion of blood components, during or after their administration. Nonetheless, the adoption of nursing care protocols can significantly minimize the occurrence and severity of TRs.5

According to the Ordinance nº 1.353, of 06/13/2011, blood transfusions should be preferably performed during the day period, thus avoiding unwanted effects occurrences and that are not perceived or treated in a timely manner.9

In Brazil, it was implemented, in 2001, the Blood Surveillance Program by the National Health Surveillance Agency (ANVISA), with the purpose of monitoring the unwanted effects (transfusion reactions) arising from the blood and its components, with a view to improving the quality of products and processes involving the blood therapy, increasing the safety of this therapeutic treatment.11

The adoption of nursing care protocols in the follow-up of the transfusion process might significantly contribute to the reduction of RTs, as well as generating reports of undesirable events towards the ANVISA. This will contribute to the generation of statistics and a better control on the hemotherapeutic units throughout the country.11

To facilitate the understanding about the possible reactions arising from or related to the infusion of blood components, we will present in Table 3, below, the RTs according to their classification in relation to the defense system of the human body, in immune and non-immune, and with regard to the time of occurrence, in acute or chronic.

<table>
<thead>
<tr>
<th>Blood component type</th>
<th>Temperature and storage place</th>
<th>Infusion time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrations of Erythrocytes (CE)</td>
<td>Storage place: Fridge, Temperature: 4 ± 2ºC</td>
<td>The ideal is performing the transfusion in 2 hours; you should not exceed 04 hours.</td>
</tr>
<tr>
<td>Platelet Concentrate (PC)</td>
<td>Storage place: Platelet shaker, Temperature: 22 ± 2ºC</td>
<td>The ideal is quickly performing the infusion; you should not exceed 04 hours.</td>
</tr>
<tr>
<td>Fresh Frozen Plasma (FFP)</td>
<td>Storage place: Freezer, Temperature: -18ºC</td>
<td>The ideal is performing the transfusion between 20 and 40 minutes; you should not exceed 04 hours.</td>
</tr>
<tr>
<td>Cryoprecipitate (CRYO)</td>
<td>Storage place: Freezer, Temperature: -18ºC</td>
<td>The ideal is quickly performing the infusion; you should not exceed 04 hours.</td>
</tr>
</tbody>
</table>

Note: the infusion rate should be appropriate to the clinical status of the elderly and the indication for transfusion.

Figure 2. Distribution of blood components according to time and storage place and suggestion of infusion time. 2013-2013.
The risks that the unity will be focused on the staff is responsible for the approximately 10% of cases.

Therefore, it is fundamentally important to have knowledge both in relation to the specific activities of the nursing professional and other members of its team, being that they should be alert to intervene in any kind of circumstances.

### CONCLUSION

Thus, it is possible to conclude that we should initially assess the indication, the time, the volume and the clinical conditions of the elderly patient, referring to the hemodynamic stability and the cardiopulmonary operation.

### REFERENCES


Submission: 2013/05/13
Accepted: 2013/08/04
Publishing: 2013/09/15

Corresponding Address
João Evangelista da Costa
Av. Aeroporto Dois de Julho, 345
Conj. Jardim Aeroporto / Emaús
CEP: 59149-316 — Parnamirim (RN), Brasil

Costa JE da, Mendonça AEO de, Simpson CA et al.


