



USING A DEVICE FOR CONTINUOUS INFUSION OF A CHEMOTHERAPEUTIC AGENT IN THE PERCEPTION OF THE ONCOLOGIC PATIENT

UTILIZAÇÃO DE DISPOSITIVO PARA INFUSÃO CONTÍNUA DE QUIMIOTERÁPICO NA PERCEPÇÃO DO PACIENTE ONCOLÓGICO

UTILIZACIÓN DE DISPOSITIVO PARA INFUSIÓN CONTINUA DE QUIMIOTERÁPICO BAJO LA PERCEPCIÓN DEL PACIENTE ONCOLÓGICO

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This is a qualitative study whose aim was to describe the perception of an oncologic patient regarding the use of a device for continuous infusion of a chemotherapeutic agent. It was carried out with eight patients, through a semi-structured interview with this guiding question: "How do you feel about using a device for continuous infusion of a chemotherapeutic agent?". Three categories emerged: avoiding hospitalization; unveiling the unknown; and performing activities. The patient highlights the benefit of going home and the possibility of performing activities, despite the anxiety regarding the presence of the device and the new experience in her/his daily life. The results were important to direct the guidelines related to the positive and negative aspects of this technology.

Descriptors: Oncologic Nursing; Medical Oncology; Drug Therapy; Infusion Pumps.

Estudo qualitativo cujo objetivo foi descrever a percepção do paciente oncológico em relação à utilização de um dispositivo para infusão contínua de quimioterápico, realizado com oito pacientes, por meio de entrevista semiestruturada com a questão norteadora: "Como você se sente utilizando dispositivo para infusão contínua de quimioterápico?". Três categorias emergiram: evitando a hospitalização; desvendando o desconhecido; e desempenho de atividades. O paciente destaca o benefício de ir para casa e a possibilidade de realizar atividades, apesar da ansiedade quanto à presença do dispositivo e experiência nova em seu cotidiano. Os resultados foram importantes para direcionar as orientações relativas aos aspectos positivos e negativos dessa tecnologia.

Descritores: Enfermagem Oncológica; Oncologia; Quimioterapia; Bombas de Infusão.

Estudio cualitativo cuyo objetivo fue describir la percepción del paciente oncológico con relación a la utilización de un dispositivo para infusión continua de quimioterápico, con ocho pacientes, a través de entrevista semiestructurada con la pregunta orientadora: "¿Cómo te sientes utilizando un dispositivo para infusión continua de droga de quimioterapia?". Tres categorías emergieron: evitar la hospitalización; desvelar lo desconocido; y desarrollo actividades. El paciente destaca el beneficio de ir a casa y la posibilidad de realizar actividades, a pesar de la ansiedad en cuanto a la presencia del dispositivo y a la experiencia nueva en su cotidiano. Los resultados fueron importantes para hacer direccionar a las orientaciones relativas a los aspectos positivos y negativos de esta tecnología.

Descriptor: Enfermería Oncológica; Oncología Médica; Quimioterapia; Bombas de Infusión.

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INTRODUCCION

The neoplasias are grouped in more than two hundred types, each one of them presenting specific characteristic and distinct biological behavior, resulting from genetic alterations which generate mutant cells that acquired autonomy in the growth and have the capacity to invade other tissues. The causes of the mutations are varied, many times related to external factors, such as chemical substances, radiations and viral infections that attack specific genes in predisposed subjects⁽¹⁾.

The World Health Organization (WHO) estimates that until the year 2030 there will be around 27 million cases of cancer, 27 million deaths caused by cancer and 75 million people will be diagnosed annually with cancer, and the most important effect of this increase is observed in countries with low and average income. Brazil follows this trend, with the change in the profile of the diseases which attack the population; it is observed that from 1960 on, the infectious and parasitic diseases stopped being the main causes of death, being substituted by the rising incidence and mortality due to chronicle degenerative diseases and neoplasias⁽²⁾.

Among the several modalities of treatment of the cancer, chemotherapy is the most frequent. Around 60 to 70% of the patients need this therapy, which uses chemical agents, isolated or combined, with the objective to treat the malign tumors⁽³⁾, and this can be associated, or not, to other modalities. The protocol of the therapy is instituted according of the type of the tumor, biological behavior, location, extension of the disease, age and general conditions of the patient⁽¹⁾. Currently this therapeutic modality is feasible due to the use of technology in health such as the use of devices for continuous infusion.

The device for continuous infusion is a unidirectional elastomeric pump. Its main components are: the elastomeric balloon, the flow resistor, the tube, the protecting lid, the threaded connector and the final

lid. It can be used for intravenous, epidural or subdural infusion, for a period of 12 hours up to seven days⁽⁴⁾. Among its advantages, we can mention the facility of mobility, its easy occlusion and the fact that the parameters of infusion cannot be altered by the user. As disadvantages there are the little precision of the devices and the lack of consistence of the time of the infusion, that is, it is not trustworthy that the flow of the infusion of the medicine will always be the same during all the period⁽⁵⁾. Its creation has influenced chemotherapeutic therapy, making the continuous administration of medicine outside the hospital possible, which represents a great advantage in the attention to the oncologic patient.

The devices for continuous infusion have been in clinical use for more than 20 years, being widely used in hospitals and home care for the infusion of chemotherapeutics, antimicrobial agents, analgesia, anesthesia and for the control of the pain in post-operative period⁽⁵⁾.

The permanence at home and living with the family are highlighted once they minimize the discomfort caused by the disease and the treatment, once long or frequent periods of hospitalization, besides being extremely uncomfortable and weary, can represent a threat to these patients. Facing that, some questions appear: How do the patients face the use of the device with the infusion of a chemotherapeutic agent? How is the return home and to work? How does he perform his daily activities? Which feelings does this patient show with the use of this technology?

For nursing, to know what the oncologic patients think about the use of this technology is of vital importance, once from that it is possible to formulate strategies of education in health, clarify the users' doubts, minimizing the fear of the unknown, making the process of acceptance and collaborations of the patient easier, with a greater possibility of success in the therapeutics.

Therefore, the study aimed at describing the perception of the oncologic patients as to use of the devices for continuous infusion of chemotherapeutic agents.

METHOD

A descriptive and exploratory research with qualitative approach, made with the patients of a health plan operator, in the city of Fortaleza, Ceará, Brazil. The application of this method is explained due to the nature of the proposed study, once the qualitative research is justified for privileging the subjectivity of the information through the reports of the patients⁽⁶⁾.

The choice of the health plan operator was due to the distribution of the device for continuous infusion by the service. The selection of the patients occurred through the sector of authorization of chemotherapy. The main criterion for the user of the device for continuous infusion is the need of infusion of a medication in a continuous and uninterrupted way for a period over 24 hours. In these cases, for the patient not to stay hospitalized, there is the option of the user to make use of this technology and go home with the device, and it is benefic both for him, that can return home, as for the operator that reduces the costs with hospitalization.

The subjects of the study were the user who complied with the criteria of inclusion: patients starting the protocol with the chemotherapeutic agent; using the device for continuous infusion for the first time; and being over 18 years.

The semi-structured interview was held at home, from April to May 2013, through a guiding question: How is it for you to be using a device for continuous infusion of chemotherapeutic agent? It is worth highlighting that the interviews were previously booked

on the telephone and interrupted when the saturation of the information was obtained.

The speeches were registered in a recorder and wholly transcript. The data were submitted to the analysis of contents⁽⁷⁾ contemplating the stages of pre-analysis and the organization of the material; exploration of the material; classification and categorization of the findings; organization and interpretation of the results.

The study was approved by the Committee of Ethics in Researches with Human Beings of the Universidade Federal do Ceará under Legal Opinion no. 243,289. Regarding the rights of the patient and with the intention to preserve his anonymity, the patients were classified by the sequential order of the interviews: P1, P2 (...), P8.

RESULTS

Eight patients participated, six of the male sex and two of the female sex. The age range was between 49 and 68 years, with an average of 59 years. As to the marital status, five were married, two divorced and one single. Five finished high school, two had a university degree and one finished grade school. Regarding religion, six were catholic, one evangelic and one without a defined religion. Related to the occupation five were retired, one was an entrepreneur, one a secretary and one an agriculture worker. Regarding the medical diagnosis, three had gastric carcinoma, three presented malign neoplasia of the rectus and two malign neoplasia of the pancreas.

The analysis of the interview allowed the identification of three categories: avoiding hospitalization, unveiling the unknown and performance of activities. For a better comprehension the categories and speeches corresponding to Figure 1 were explained.

Categories	Speeches of the patients
Avoiding hospitalization	<p><i>I think that using these devices is better than been hospitalized...for me just staying at home is already very good (P1).</i></p> <p><i>It is because like this I stay at home with my husband and my daughter. If it were in a hospital they couldn't stay with me (P2).</i></p> <p><i>I would rather come home using this device for chemotherapy, so I can sleep in my room, which is more comfortable than sleeping in a hospital (P3).</i></p>
Unveiling the unknown	<p><i>I am beginning the treatment today, at home, it's just me and my wife, and so I don't know who to go to in case I have a problem. I don't know how to do this here (referring to the infusion device)... I don't know how it works... and if it stops working, how will I know? (P4).</i></p> <p><i>I still don't know well how this works. I keep thinking that I will be bad at any moment (P3).</i></p>
Performance of activities	<p><i>I think it is very good, I didn't stop doing anything, I work with tapestry; I come to my factory regularly, at night I go home. I even asked the nurse if I could take this little pump out (referring to the device) near where I live, for I live far away from the hospital, but she sad I couldn't (laughter) (P6).</i></p> <p><i>I liked this here (referring to the device), because I can go on taking care of the house, making my lunch and watching things around the house. I can't keep lying down, so at least, I feel better this way (P7).</i></p> <p><i>I am feeling difficulty to sleep, last night I couldn't sleep because I was afraid to move and this little pump would move too (P8).</i></p>

Figure 1 - Description of the categories and speech of the interviewed patients concerning the use of the device for continuous infusion. Fortaleza, CE, Brazil, 2013

Regarding the category *avoiding hospitalization* several patients reported the benefit of going home, staying beside the family, sleeping in their bedrooms, thus avoiding the discomfort of being hospitalized.

In the category *unveiling the unknown* several, some patients reported anxiety as to the presence of the device, for being something new. There was also a patient who reported it as being a new experience, once using the portable device she stayed at home longer going through other experiences.

As to category *performance of activities*, there were reports that the use of the device for continuous infusion favored the performance of their activities both in their daily activities as well as at work, once the fact of being portable allowed mobility and independence. But some patients pointed restriction in the activities, showing anxiety when performing daily tasks, fear and discomfort as to moving, jeopardized sleep and rest due to the device coupled to the abdomen.

DISCUSSION

The use of technology in health is a current trend. It is not enough to think about the treatment without involving comfort, convenience and the maintenance of the quality of life of the patients. For the oncologic patient the worry concerning this theme is reinforced, through the development of the new treatment in the area of chemotherapy and radiotherapy, once it is not possible to prolong the survival of the patient without having a minimum quality of life⁽⁸⁾.

Concerning the oncologic patient, the presence of cancer causes a great impact in his daily life causing profound changes in his habitual way of living, besides the secondary effects regarding the impairment of the capacity and ability for the performance of activities of the daily life⁽⁹⁾.

Therefore, the search and concern with the welfare and the quality of life of the patients under

chemotherapeutic treatment must be a factor to be taken into consideration in the choice of the current treatment.

Currently the nurse has an important role in the assistance to the oncologic patient, once through the supervision, orientation and implementation of the actions of nursing, he can promote an improvement in the perception of the disease and its treatment, as well in the confrontation with them, bearing in mind that a better comprehension on its pathology, presented effects, treatment, consequences and chances of cure, making the patient find more effective ways to tolerate and face all the stages of this fearful disease⁽¹⁰⁾.

The use of devices for continuous infusion showed to favor the patients under chemotherapeutic treatment, when identifying the category *avoiding hospitalization*, showing that the patient feels well when having the possibility of going home, of sleeping in his own bed, staying beside his family members and this is quite positive in the treatment of the oncologic patient.

The hospitalization provokes great changes in the habits of life of the patient, keeping him away from social life, from his personal objects, besides increasing the risk of hospital infection⁽¹¹⁾. Added to that, the permanence in the hospital is difficult once it restrains the quantity and the change of visitors⁽¹²⁾, making this moment uncomfortable and unpleasant for the patient.

The preference in staying at home was also emphasized in another study once although the patients received a good hospital assistance, they preferred the coziness of their homes where they found quietness and rest, difficulty to be kept when they were hospitalized⁽¹³⁾. So, home becomes a privileged area, once it preserves the singularity of the human being, valuing his inter-subjectivity generating benefits such as autonomy and freedom⁽¹⁴⁾.

Another important factor to be considered is the reduction of the risks for the oncologic patient, as to the possibilities to acquire hospital infection which has a

direct relation with the increase of the rates of hospitalization, as well as of morbimortality for the patients in general. With the oncologic patient, there is many times a suppression of his immunological system, the presence of infection will influence in the treatment and recovery of these patients, and it must be avoided.

The category *unveiling the unknown* evidenced the presence of anxiety and doubt regarding the presence of the infusion device. The nurse has an important role with the oncologic patient, once he is a part of the interdisciplinary team and follows him in all the health centers and it is up to this health professional to orientate, clear doubts and calm the patients who are going through this new experience.

The health professional must be an able one, qualified in the activity he performs in order to be able to provide orientations safely, thus exercising human and individualized care, going beyond his scientific knowledge, establishing a relation in which the nurse is willing to listen to the patient and provide information about this treatment. The effective communication allows the transmission of clear and objective information in order to provide better choices and solutions, becoming one more way for the patient to clear his doubts about the disease and treatment, being indispensable for an assistance of quality⁽¹⁵⁾.

In order to know how to provide orientation and recognize the doubts and wistfulness of these patients is a fundamental role in the work of the nursing professional. For the oncologic patient this becomes important, as it is highlighted in a study that shows that the complexity of the treatment demands a sum of technical-scientific abilities and interpersonal relationships. The knowledge added to affection, communication, sincerity and empathy, form constructive elements for the care which are influencing the development of the assistance rendered to the oncologic patient⁽¹⁵⁾.

Therefore, when offering support to a patient, the nurse must be receptive to help as much as possible fulfilling his need. So it is possible to have the individualized directing of attention, observing his needs, once it is in the comprehension of the other in sharing the actions that the nurse provides the possibility of the patient to participate in his self care, perceiving his potentialities⁽¹⁶⁾.

In the category *performance of activities*, some reports of positive aspects were observed such as the possibility to stay at work, also negative aspects, such as the fear of making brisk movements and removing the device of its position.

A recent study showed that women who are submitted to treatment to find cancer presented some obstacles in the performance of their daily tasks⁽¹⁷⁾. So, the possibility to perform activities during the administration of chemotherapeutic agents appears to be a positive point for the use of the devices for continuous infusion, making the treatment less aggressive, reducing the sensation of dependence favoring the quality of life of the oncologic patients.

It was evident that having the arms free and the possibility to perform activities during the chemotherapeutic treatment was the reason for a great satisfaction among the oncologic patients, as well as the reduction of the emotional stress⁽¹⁸⁾. This same group of patients also showed sleep alterations resulting from a device for administration of chemotherapeutics. This aspect must be considered by the nursing team to provide orientation, as to reduce the stress caused by the moving during the sleep and rest and thus favoring this activity, which must always be valued in these treatments.

The need of communication between the nurse and the patient is identified through the establishment of a relation of trust, where the health professional identifies the points which deserve attention and orientation. Such statement is reinforced in a study that

confirms that the communication in nursing makes the professional help to the patients possible to better adapt to the situations, identifying and attending their needs, besides transmitting trust to make them feel satisfied and secure, reducing fear and anxiety, allowing them to participate in their treatment⁽¹⁵⁾.

CONCLUSION

Living a new experience arises several feelings as well as individual perceptions. It was possible to notice that the patients who use the device for continuous infusion in the administration of chemotherapeutic agents presented anxiety, fear of the unknown, insecurity, insecurity and doubts.

But the positive aspects are also found and highlighted, such as the possibility to return home, perform daily activities and work.

The report of these experiences showed that it's important to have the development of actions of nursing which clarify the indication, use, handling and limitations of the use of the elastomeric pump for the infusion of intravenous chemotherapeutic agents at home, so that the patient will not face an unknown situation, reducing his anxiety and calming the patient during and after the procedure.

The benefits concerning the use of this technology must be clarified to the patient, showing the positive and negative aspects regarding the use of devices for continuous infusion.

The study showed real and unique experiences, individual feelings, which, once known by the nursing team, lead to planning of concrete actions through the speeches of the patients themselves.

COLLABORATIONS

Siqueira JF contributed for the conception of the study, revision of the literature, analysis of the data and initial writing of the manuscript. Silva DMA contributed for the revision of the methodology of the article. Oliveira FJG,

Campos FA and Camurça MNS contributed in the initial conception of the study, revision of literature and analysis of the data. Caetano JÁ contributed for the writing of the article and final approval of the version to be published.

REFERENCES

1. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Ações de enfermagem para o controle do câncer: uma proposta de integração ensino-serviço. 3ªed. Rio de Janeiro: INCA; 2008.
2. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Estimativas da incidência e Mortalidade do Câncer no Brasil. Rio de Janeiro: INCA; 2011.
3. Bonassa EMA, Gato M. Terapêutica oncológica para enfermeiros e farmacêuticos. 4ª ed. São Paulo: Atheneu; 2012.
4. Baxter. Infusor. Sistema de infusão portátil em elastômero. [internet] 2013. [citado 2013 jun 30]. Disponível em: http://www.latinoamerica.baxter.com/brasil/images/br/pdf/Bula_Infusores_LV.PDF
5. Skryabina EA, Dunn TS. Disposable infusion pumps. *Am J Health Syst Pharm.* 2006; 63(13):1260-8.
6. Demario RL, Sousa AA, Salles RK. Comida de hospital: percepções de pacientes em um hospital público com proposta de atendimento humanizado. *Ciênc Saúde Coletiva.* 2010; 15(1):1275-82.
7. Bardin L. Análise de conteúdo. Lisboa: Edições 70; 2008.
8. Sawada NO, Nicolussi AC, Okino L, Cardozo FMC, Zago MMF. Avaliação da qualidade de vida dos pacientes com câncer submetidos à quimioterapia. *Rev Esc Enferm USP.* 2009; 43(3):581-7.
9. Michelone APC, Santos VLCCG. Qualidade de vida de adultos com câncer colorretal com e sem ostomia. *Rev Latino-am Enfermagem.* 2004; 12(6):875-83.
10. Panobianco MS, Pimentel AV, Almeida AM, Oliveira ISB. Enfrentando o câncer do colo do útero. *Rev Bras Cancerol.* 2012; 58(3):517-23.
11. Nazaro TEA. Cuidar do idoso em domicílio: a mudança na vida da família. In: Prata da casa 2: escritas do cotidiano de uma equipe que cuida. São Paulo: Oboré; 2009.
12. Wingeste ELC, Ferraz AF. Ser assistido pelo serviço de assistência domiciliar: uma rica experiência para o doente de aids e seu cuidador. *Rev Min Enferm.* 2008; 12(1):34-9.
13. Zaroni ACN, Pereira FC, Sakamoto M, Sales CA. O cuidado hospitalar e o cuidado domiciliar: vivência expressa pelos doentes portadores de neoplasia maligna. *Rev Enferm UERJ.* 2006; 14(1):48-53.
14. Brondani CM, Beuter M, Alvim NAT, Szareski C, Rocha LS. Cuidadores e estratégias no cuidado ao doente na internação domiciliar. *Texto Contexto Enferm.* 2010; 19(3):504-10.
15. Peterson AA, Carvalho EC. Comunicação terapêutica na Enfermagem: dificuldades para o cuidar de idosos com câncer. *Rev Bras Enferm.* 2011; 64(4):692-7.
16. Klüser SR, Terra MG, Noal HC, Lacchini AJB, Padoin SMM. Vivência de uma equipe de enfermagem acerca do cuidado aos pacientes com câncer. *Rev Rene.* 2011; 12(1):166-72.
17. Salci MA, Marcon SS. Após o câncer: uma nova maneira de viver a vida. *Rev Rene.* 2011; 12(2):374-83.
18. Martins FTM, Carvalho, EC. A percepção do paciente referente a ser portador de um cateter de longa permanência. *Rev Esc Enferm USP.* 2008; 42(3):526-31.