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CENTRAL CATHETER PERIPHERAL INSERTED: RECORDS OF NURSING AND PATIENT'S SAFETY

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ABSTRACT
Technical and scientific knowledge and nursing records are linked to patient safety and reflect the quality of the assistance provided. This study aimed to analyze the records of nursing in instrument for registration and monitoring of peripherally inserted central venous catheter in intensive neonatal care unit, pediatric intensive care unit and intermediate care unit a teaching hospital of the Western Region of Paraná State, Brazil; and characterize the nursing staff of the units studied. It is a documentary survey study of descriptive analysis. Composed it 666 sample charts, in the period from July 2009 to July 2014. There were identified in instruments, inadequate nursing records, incomplete or non-existent. For characterization of the nursing staff, 15 nurses and 37 nursing technicians responded to the questionnaire. Of the nurses, 93.3% have technical skill and legal for insertion of the catheter and 93.6% of nursing technicians were qualified for the care of maintenance. We consider necessary training and permanent education of nursing professionals regarding nursing records, which, when inadequate, incomplete or non-existent, can disorganize the planning, development and evaluation of the assistance, compromising the process of care and, consequently, patient's safety.

Keywords: Central venous catheterization. Patient's safety. Nursing records. Pediatric nursing. Intensive care units.

INTRODUCTION

The peripheral inserted central catheter (PICC) was integrated to Neonatal Intensive Care Units in the 1970's for parenteral nutrition administration. Currently, it has been widely used, not only in newborns, but also in adults and children[1-2]. Because of its high success rate on insertion and low risk of complications, it came to be used as a method of first choice of extended vascular access, contributing mostly to endovenous treatment of newborns that require infusion of multiple associated intravenous solutions[3-5].

Nurses working in Neonatology and Pediatrics require training to insert PICC and constant update to support the practice, particularly concerning the indication, care, repairs and removal of catheter; which must be guided by institutional protocols in development of Systematization of Nursing Assistance (SAE)[2,5].

For the care of newborns and children in use of PICC there are required from the nursing staff knowledge and specific technical skills for safe handling of this device. However, in addition to technical and scientific competences, it matters to the appropriate nursing procedures and registration assistance. The records performed by nurses, technicians and nursing assistants to keep the SAE, whose nursing process guides the set of actions taken to the patient[4].

Nursing records are essential for patient care documentation and provide subsidies for the plan of care, for the evaluation of the assistance provided, to the follow up of its evolution[2] and, consequently, to assure patient's safety[5] and the quality of care. It should be noted that, in nursing care to newborns and children in use of PICC, patient safety is related to prevention and early detection of complications related to the same[5]. It is the evaluation of the assistance processes, since the insertion to removal of the PICC, which can subsidize nursing action plans aimed at the prevention and early detection of complications or the PICC.

For evaluation of nursing care in the use of PICC, it is recommended the implementation of an own document to insert data record and time of use of the catheter[2]. However, inadequate, incomplete or non-existent records relating to nursing care could compromise the care and safety of the patient, in this case, the children.

Before the above issues as the records of nursing assistance tools, regarding the use of PICC in neonates and infants admitted to neonatal units and intensive and

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semi-intensive Pediatric. Soon, the study aimed to analyze the records of nursing in instrument for registration, monitoring and evaluation of PICC (IPRAAPICC) in Neonatal Intensive Care Unit (ICU-N), Pediatric Intensive Care Unit (ICU-P) and Care Unit Intermediaries (UCI), a teaching hospital of the Western Region of Paraná State, Brazil, as well as characterize the nursing staff of the units studied.

METHODOLOGY

This is a larger study of article exploratory type, descriptive, retrospective and documentary; entitled: Lifting Peripherally Inserted Central Catheter: An analysis of the use in Neonatal Units and Intensive and Semi-Intensive Pediatric Units, developed in a teaching hospital of the Western Region of Paraná State, Brazil. The study has a favorable opinion to its development by the Research Ethics Committee of the State University of Western Paraná, under N861,914 and CAAE N 35908114.9.0000.0107.

The data collected are from the period from July 2009 to July 2014, since the nurses study units received training for inclusion of PICC in 2008, with the registration, monitoring and evaluation of the use of catheters made by own record (IPRAAPICC), prepared by the nurses and incorporated into the patient records, in order to document, monitor and evaluate the catheters inserted in newborns, children and adolescents, the units studied.

By demanding the institutional information technology system, there were identified 2,494 charts of children hospitalized in the units and time period of the study. The sample of the study consisted of 666 records that had the IPRAAPICC.

A tool for collecting data from the IPRAAPICC of neonates, children or adolescents who received the catheter, at which are listed in the components and analytical variables of the study as to the identity of the children (gender, age, weight, diagnosis, indication of the catheter) and catheter (caliber); the insertion (date, product for degermation, duration of procedure, number of attempts of puncture punctured vessel, location, steps to control the pain, complications, radiological location) and the removal of the catheter (date, reason).

There were as inclusion criteria of the study,tools those contain the variables of the study adequately met, according to the studied period; and, criteria for exclusion, the instruments to submit incomplete fill in one or more analytical variables, which damage the analysis; the instruments of patients who had been transferred to other healthcare institutions in use of PICC, which could not be monitored as to the date of removal of the catheter and possible complications.

In the course of the study there was the need to review criteria for inclusion and exclusion from the study, whereas the incomplete filling or filling of analytic instruments numerous variables would achieve adequate sample for analysis of the study larger, damaging it. So, we decided to consult the printed and electronic medical records of patients, with reading the daily records of nursing and other professional health care team, in addition to consult other documents available on the printed chart to locate missing information about the tools, in order to get the proper filling of the variables of the data collection instrument of study. Data analysis was descriptive.

RESULTS AND DISCUSSION

The ICU-N and the UCI are composed of ten single beds and the ICU-P by five single beds. Make up the nursing staff of three units, 18 nurses and 47 nursing technicians. Of these, 15 nurses and 37 nursing technicians answered the questionnaire for representation of nursing staff. The age range of participants is of nurses, on average of 39 years old, being prevalent female (91.6%); and, technicians from nursing, the average age is 42 years old, all female. Note that the predominance of the female gender in nursing is observed since the legacy of Florence Nighthingale, being kept in mind the hierarchical divisions of the work of nurses, and nursing assistant coach until the present day[6].

Of the nurses, 93.3% have technical and legal ability to insert PICC and 93.6% of nursing technicians were qualified maintenance care of the catheter. Compared to study that identifies 64.8% of nurses not enabled to insert PICC, it is understood that, in this study, according to the percentage of qualified nurses and training time, could find satisfactory results not only in relation the insertion technique, keep and removal of this venous access[7], as well as to the records of the practice of the nurse. What does not happen in this study, which notes the absence, inconsistency or incompleteness of nursing records in IPRAAPICC, as well as in printed and electronic medical records of patients.

Nursing produces, daily, about 50% of the information contained in patient records[4], what makes the need for adequate records unchallenged and completed by the professionals. However, often, there are records those do not contain all the information of

the working process of nursing, described the following condition, considering the components and analytical variables of the study.

During data collection, information about the identification of children, such as gender and age were found easily on printed and electronic medical records of patients, but there were not always present in the IPRAAPICC. The children's weight at the time of fixing of the PICC, was a given hard to find, both in IPRAAPICC and in the printed and electronic medical records. However, it stresses the importance of that given to the calculation of dose of medication in Pediatrics, particularly the need for dilution and or rediluição of medicines for adult use[8].

According to studies, newborns make use of PICC mainly because of diagnoses of prematurity, low birth weight, disease of the respiratory, digestive and cardiac apparatus, fetal malformation, twin pregnancy, shock or perineal infections[5, 9-11]; have older children make use of PICC for diagnostics of nervous and respiratory apparatus[12-13]. These data confirm the finds in IPRAAPICC, in the field concerning the diagnosis or reason for hospitalization in intensive care-N,-P, or UCI. However, the field concerning the indication of the catheter was filled with the same diagnostic information or reason for hospitalization of the child, which is not always related to the need for a safe and prolonged intravenous long-term therapy provided by PICC, which may require weeks or months intermittent intravenous infusion, as for administration of parenteral nutrition, infusion of vesicants medications, irritant, vasoactive, hiperosmolares solutions, chemotherapeutic drugs, antimicrobial drugs, blood transfusions[1,5,10,14].

So, to find the catheter was necessary to use the printed and/or electronic charts and perform reading the records of the health team, since the information indication catheter insertion was not clearly identified in the IPRAAPICC through the nursing records.

As to the identification of the catheter, the field for the caliber, most of the time, it wasn't filled out in IPRAAPICC. Sometimes, the researchers identified it through the packs those werestapled by the tool or available in the printed handbook (loose).

As the above, relating to the indication and identification of the used catheter, the nurse perform careful evaluation of the veins of patients to indicate the caliber consistent with intravenous therapy indicated and required, as well as register on the instrument type and caliber catheter used in venipuncture. Still competes to this professional construction, implementation and evaluation of clinical practice guidelines that guided the choice of the best IV device, according to the individual needs of patients[2].

In reason of the PICC, it is mainly used in Neonatal Intensive Care Units, the monolumn 1.9 silicone catheter Frenchs (Fr), indicated for newborns with prescription of intravenous solution only, is the most commonly used, followed by the use of the double lumen catheter 2.0 Fr polyurethane[9,11]. These calibers require greater care in volume infusion and drugs by nursing staff, in order to ensure patient safety, which incurs the need for greater attention of the nurse as the record that identifies the catheter inserted.

As to the duration of catheter insertion procedure and the number of attempts of puncture, met conflicting information, which there was left in doubt the real time used for the insertion of the catheter. For example, when there was a record of puncture attempts without success, was the only record a time of duration of the procedure filled out in IPRAAPICC, it is not explained if that time corresponded to the total time between attempts to inject and the successful puncture or corresponded only to the time of the successful puncture. A priori, it was considered to be the first option the corresponding to the time registered. Regarding puncture attempts, a record has been identified the 15 attempts and the time of duration of the procedure ranged from five to 300 minutes, considering the three units of study. However, due to the excessive number of attempts[15] and the maximum time the procedure (300 minutes); raised the question whether there was error in registry or if this information corroborates, in fact, the practice of inserting the catheter in the units studied.

To answer this question, research that compares the placement procedure of PICC guided by palpation and by vascular ultrasound points out that, in the first situation, five tries, with total length of 70 minutes; in the second situation, an attempt was made and the duration of the procedure was 20 minutes. Based on these data, the vascular ultrasound can be a useful tool to facilitate the process of inclusion of PICC for nurses and promote safety of newborns and infants who require use of the catheter[15]. However, skill and dexterity of the nurse, acquired by the frequent practice of catheter use, also influence the fewest attempts and would even take time for insertion of catheters guided by palpation, since other studies present the duration even smaller procedure[9,16]. It can connect the numerous attempts of puncture and the duration of the procedure too long the complication during the procedure, condition that this study did not correlated. However, it is understood that the fact that nurses are technical and legally qualified for the

procedure in your majority, since 2008, would confer greater skill and dexterity in the execution of PICC insertion technique.

For degermation of the skin before catheter insertion, tools identified the information also use 2% or 4% alcohol, 4% degermante clorexedine, also without identification of the type (alcoholic or degermante) and concentration (2% or 4% or another) and solution 70% alcohol. However, as to not always records also indicate if they were with alcoholic or degermante solution and its concentration.

According to literature, for chloroquine, 0.5% chlorhexidine is indicated as a first choice antiseptic. 70% alcoholic solution, iodine tincture, iodofor or alcoholic chlorhexidine gluconate solution may be used when the first choice is contraindicated[1]. Already 1% aqueous chlorhexidine gluconate is more effective than 1% povidine-iodine in reducing blood culture contamination rates[17]. Based on scientific evidence, it is up to the service to define the choice of the drug maker and the nurse the appropriate record of use.

In reference to the punctured vein, tools detected the description of veins other than those recommended by literature, such as the femoral vein, superficial temporal, radial, accessory, accessory cephalic, headset, temporal, malleolar, retro headset, back of the hand, parietal region, calcaneus, popliteal, cubital fossa, forearm, podálica, dorsal, lateral region perforans, instep and pit first, and the literature recommends the cephalic veins Basilica and as first choice, and also the external jugular veins, headset, and, occasionally, the bypass[10]. These records suggest that, at the time to fill out the field for the identification of the vessel punctured in the IPRAAPICC, the nomination of the same may be confused with the body of the child region that received PICC. The daily records of nursing, also noted the use of phlebotomy and record or umbilical catheter for the child, when, in reality, the child made use of PICC.

It is understood that, when the nurse has skills to perform insightful evaluation of intravenous net, prior to insertion of the catheter, may contribute to the increased matches and to reduce the number of attempts of puncture, in addition to patient's exposure to numerous painful procedures[2]. Besides, clinical skills and technical expertise of professionals, attached to the venous Anatomical knowledge, skill in performing the venipuncture and quiet during the procedure can assist in the selection of a vein and appropriate catheter. These conditions contribute to the insertion occurs slowly, allowing the blood return to the heart and helps in the transport of the catheter to the inferior vena cava, and, consequently, promote the reduction of the risk of central position of PICC[2,18].

On the anatomical location of the catheter (for radiological image), an 'OK' on the corresponding field of the device represented this information, it being understood as a 'YES' to the central location of the catheter. However, various devices did not contain information confirming or denying the central location of the catheter. Some contained the information that the catheter had been 'pulled'. For example, "pulled 3 cm", which leads to understand that was not in the center position and was pulled;however, without the confirmation record of central catheter position to beginning of safe drug infusion.

After insertion of the catheter, radiological image enables verification of the central position (tip positioned in the superior vena cava) and release for use of venous infusion[5,18] or not. One might want to inform that the most frequent site of catheter displacement is the jugular vein, followed by the axillary vein[18]. In possession of the frame and radiological finding, the male nurse registering the anatomical location of the catheter, whose central location incurs the risk of complications during drug infusion, nursing competence.

About the date of insertion of catheter, this information was not always available on the instrument, and it is necessary to use the printed and electronic charts for its identification. Often, nor hinted at-charts on. Likewise, information about the date and reason of removal of catheter commonly were absent, being identified through the evolution of nursing of the electronic health record. The absence of this information, for its time, made it hard to identify the period of stay of the catheter.

About the reason of removal of catheter, indicating instruments for flogistic signal removal did not have record of sending the tip of the catheter to culture or even the result of this culture. There were identified 17 instruments with request of the catheter tip, two with positive cultures for bacteria and yeasts. According to this data, one can consider low incidence of infection in the reality of study or underreporting of these events.

Considers that data about the removal of catheter for suspected infection are registered with greater precision, because research shows that infections related to the use of PICC can be aggravated by risk factors such as prematurity, as well as by the inexperience of the nursing staff at the daily care to the catheter, the multiple manipulations, contamination and long stay[5], although low where the incidence of positive cultures in PICC[16].

Care with procedures involving vascular access

must be priority assistance team for prevention and control of adverse effects, ensuring patient safety. This requires technical and scientific expertise of nurses to promote education in service to your team and, consequently, to provide quality assistance to the patient.

The process of using PICC is constituted by steps, insert, maintenance and removal of the catheter, and requires technical and scientific training of nursing staff, with permanent education to constant updating, organizing regular courses, review and adaptation of rules and routines for better results from the use of this type of intravenous device[2].

The nursing staff is responsible for preserving, uphold and safeguard the catheter to minimize complications and premature removal resulting from inappropriate handling[19], prevent complications and injuries to patients[18]. This requires that the nursing staff is oriented on the care after PICC insertion, because, even after a successful placement, handling and inappropriate movements of patients, high intracranial pressure in patients with nausea, vomiting, hiccups and severe constipation, stress and even a cold environment may result inadequate positioning of the catheter tip[18].

In addition to technical and scientific knowledge, patient safety is also related to the quality of the records held by the nursing staff, which must be carried out in detail, describing every step of care, according to the Resolution of the COFEN, nº 429/2012(20), in particular, to the pediatric patient who, with their specific physiological features and more complex than the adult patient, has a greater chance of damage during your hospitalization. So, you can ensure a safe patient care with the appropriate record of actions and interventions related to nursing care.

In this logic, it is considered appropriate that the nurses adopt legal documents to standardize and improve the quality of conduct with respect to insertion and handling of PICC, as the standardization of institutional protocols, rules and routines of the institution and Term of Informed consent in pediatric patient, by your responsible, with the aim of standardizing the procedure by your description of technique[7].

The tools for the use of PICC are considered tools those strengthen the use of intravenous devices in all their phases, especially in keeping protocols, due to loss of the catheter for obstruction. The creation of intravenous therapy groups for discussion and implementation of institutional protocols developed from the SAE, based on the best scientific evidence, the reality and the institutional dialogue between the nursing staff, medical staff and family promote safe patient care in use of PICC[2].

FINAL CONSIDERATIONS

The study highlights inadequate, incomplete or non-existent records of nursing interventions and actions regarding the use of PICC in IPRAAPICC and in printed and electronic patient records, which can derail the planning, development and evaluation of assistance; compromise the process of care and, for its time, patient safety. Such a condition may be linked to lack of knowledge and guidance of nursing professionals to the appropriate registry of nursing care on the instrument, which is part of the patient's health record, an important document to be preserved, since it supports not only ethically the team in question, but also promotes patient safety. This implies the need for training and continuing education of nursing professionals to qualify the nursing records of assistance instruments and in patient records and (re) education of nurses regarding the anatomical region and nomination of blood vessels.

CATETER CENTRAL DE INSERÇÃO PERIFÉRICA: REGISTROS DE ENFERMAGEM E SEGURANÇA DO PACIENTE

RESUMO

O conhecimento técnico-científico e os registros de enfermagem estão atrelados à segurança do paciente e refletem a qualidade da assistência prestada. O estudo objetivou analisar os registros de enfermagem em instrumento para registro e acompanhamento de cateter venoso central de inserção periférica em unidade de terapia intensiva neonatal, unidade de terapia intensiva pediátrica e unidade de cuidados intermediários de um hospital de ensino da região oeste do Estado do Paraná, Brasil;e caracterizar a equipe de enfermagem das unidades estudadas. Estudo de levantamento documental, de análise descritiva. Fizeram parte da amostra 666 prontuários, no período de julho de 2009 a julho de 2014. Identificam-se nos instrumentos, registros de enfermagem inadequados, incompletos ou inexistentes.Para caracterização da equipe de enfermagem, 15 enfermeiros e 37 técnicos de enfermagem responderam ao questionário. Dos enfermeiros, 93,3% possuem habilidade técnica e legal para inserção do cateter e 93,6% dos técnicos de enfermagem foram capacitados para os cuidados de manutenção do mesmo. Consideram-se necessárias capacitação e educação permanente dos profissionais de enfermagem quanto aos registros de enfermagem, que, quando inadequados, incompletos ou inexistentes, podem

inviabilizar o planejamento, o desenvolvimento e a avaliação da assistência, comprometer o processo de cuidar e, consequentemente, a segurança do paciente.

Palavras-chave: Cateterismo venoso central. Segurança do paciente. Registros de enfermagem. Enfermagem pediátrica. Unidades de terapia intensiva.

CATÉTER CENTRAL DE INSERCIÓN PERIFÉRICA: REGISTROS DE ENFERMERÍA Y LA SEGURIDAD DEL PACIENTE

RESUMEN

El conocimiento técnico-científico y los registros de enfermería están vinculados a la seguridad del paciente y reflejan la calidad de la atención prestada. El estudio tuvo el objetivo de analizar los registros de enfermería en instrumento para registro y acompañamiento de catéter venoso central de inserción periférica en unidad de cuidados intensivos neonatal, unidad de cuidados intensivos pediátrica y unidad de cuidados intermediarios, de un hospital escuela de la región oeste del Estado de Paraná, Brasil; y caracterizar al equipo de enfermería de las unidades estudiadas. Estudio de investigación documental, de análisis descriptivo. Hicieron parte de la muestra 666 registros médicos, en el período de julio de 2009 a julio de 2014. Se identificaron, en los instrumentos, registros de enfermería inadecuados, incompletos o inexistentes. Para caracterización del equipo de enfermería, 15 enfermeros y 37 técnicos de enfermería respondieron al cuestionario. De los enfermeros, el 93,3% posee habilidad técnica y legal para inserción del catéter y el 93,6% de los técnicos de enfermería fue capacitado para los cuidados de su mantenimiento. Se consideran necesarias capacitación y educación permanente de los profesionales de enfermería en cuanto a los registros de enfermería, que, cuando inadecuados, incompletos o inexistentes, pueden dificultar la planificación, el desarrollo y la evaluación de la atención; comprometer el proceso de cuidar y, consecuentemente, la seguridad del paciente.

Palabras clave: Cateterismo venoso central. Seguridad del paciente. Registros de enfermería. Enfermería pediátrica. Unidades de cuidados intensivos.

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