



ORIGINALES

Skin injuries in newborns in neonatal intensive care

Lesões de pele em neonatos em cuidados intensivos neonatais

Lesiones de la piel en neonatos en cuidados intensivos neonatales

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ABSTRACT:

Objective: To describe the occurrence of skin lesions in newborns admitted to the Neonatal Intensive Care Unit of a public hospital in Brasília, Federal District, Brazil.

Method: Quantitative, descriptive and prospective study, which was conducted between September and December 2014. The target group consisted of 104 newborns. The descriptive analysis included absolute and relative frequencies, median and standard deviation.

Results: 42 newborns developed skin lesions, in 77 resulting injuries. The most incident was diaper rash (15.4%), erythema (13.5%) and infiltration (12.5%), Followed by ecchymosis (4.8%) and desquamation (3.8%).

Conclusion: It is essential to create protocols and/or to use instruments that aim to maintain the integrity of the newborn's skin, which can be useful for identifying any alteration, preventing or minimizing its impact and consequences.

Keywords: Skin; Wounds and injuries; Infant, Newborn; Intensive Care Units, Neonatal; Nursing.

RESUMO:

Objetivo: Descrever a ocorrência de lesões de pele em recém-nascidos internados na UTI Neonatal de um hospital público de Brasília, Distrito Federal, Brasil.

Método: Estudo quantitativo, descritivo e de abordagem prospectiva, realizado com 104 neonatos de setembro a dezembro de 2014. A análise estatística descritiva incluiu frequência absoluta e relativa, média e desvio padrão.

Resultados: 42 neonatos desenvolveram lesões de pele, totalizando 77 lesões, sendo as mais incidentes: dermatite de fralda (15,4%), edema (15,4%), eritema (13,5%) e infiltração (12,5%), seguidas de equimose (4,8%) e descamação (3,8%).

Conclusão: É necessária a criação de protocolos e/ou utilização de instrumentos que visem a manutenção da integridade da pele do recém-nascido, podendo ser ferramentas úteis para identificar

qualquer alteração no sistema tegumentar do neonato e assim prevenir ou diminuir sua incidência e suas consequências.

Palavras-chave: Pele; Ferimentos e lesões; Recém-nascido; Unidades de Terapia Intensiva Neonatal; Enfermagem.

RESUMEN:

Objetivo: Describir la ocurrencia de lesiones de la piel en recién nacidos internados en una Unidad de Cuidados Intensivos Neonatal de un hospital público de Brasília, Distrito Federal, Brasil.

Método: Estudio cuantitativo, descriptivo y de abordaje prospectiva, realizado con 104 neonatos desde septiembre hasta diciembre de 2014. El análisis estadístico descriptivo incluyó frecuencia absoluta y relativa, mediana y desvío estándar.

Resultados: 42 neonatos desarrollaron lesiones de la piel, resultando 77 lesiones, siendo las más incidentes las dermatitis del pañal (15,4%), edema (15,4%), eritema (13,5%) e infiltración (12,5%), seguidas de equimosis (4,8%) y descamación (3,8%).

Conclusión: Es necesaria la creación de protocolos y/o la utilización de instrumentos que miren al mantenimiento de la integridad de la piel del recién nacido, que puedan ser herramientas útiles para identificar cualquier alteración en el sistema tegumentario del neonato y, de este modo, prevenir o disminuir su incidencia y sus consecuencias.

Palabras clave: Piel; Heridas y traumatismos; Recién nacido; Unidades de Cuidado Intensivo Neonatal; Enfermería.

INTRODUCTION

To survive after birth, the baby needs someone to be responsible for their care, ensuring their physical and psychosocial needs such as hygiene, nutrition, protection, love, security, recovery, among others⁽¹⁾. The neonatal period is considered as the period up to 28 full days of extra-uterine life, being considered newborns preterm all those born at less than 37 completed weeks of gestation; the term infants refer to those born within 37 to 42 completed weeks of gestation and those born at 42 completed weeks of gestation or more are classified as post-term⁽²⁾.

The Neonatal Intensive Care Units are geared to meet the endangered newborn or life-threatening, which are thus considered: the newborns of any gestational age who require mechanical ventilation or in acute respiratory failure with fraction of inspired oxygen greater than 30%; newborn with gestational age less than 30 weeks or with birth weights less than 1000 grams; those requiring major surgery or immediate postoperative small and medium-sized surgeries; newborns requiring parenteral nutrition and critical newborns requiring specialized care, such as: use of central venous catheters, use of antibiotics to treat severe infections, vasoactive drugs, prostaglandin, hemoderivative transfusion and need of mechanical ventilation or fraction of inspired oxygen greater than 30%⁽³⁾.

At birth, the skin comprises 13% of the body surface and its fragility represents hazard to thermal instability, increased water requirements, increased trans epidermal absorption of substances, as well as higher colonization of microorganisms and invasive infection. Approximately 80% of the morbidity and mortality of newborns is related to trauma or normal skin function changes because of its functional immaturity associated with inadequate handling from professionals who provide assistance⁽⁴⁾.

Maintaining the integrity of the skin during the critical period is crucial, since the skin is a protective barrier of the internal organs and factors such as dermatitis, burns, ulcers, trauma, among others, could impair the protective function of this membrane⁽⁵⁾. The incidence studies and prevalence of injuries, individualized observation of newborn

and knowledge about the peculiarities of your integumentary system allow it to determine the extent of the problem in the health units, an important factor for the construction of prevention strategies and targeting of interventions. In the case of nursing in neonatology, the skin care of the newborn has become a concern, especially in the Neonatal Inpatient Units.

Considering that the following questions arise: How often occur skin lesions in newborns in critical condition? What are the characteristics of the skin lesions in neonates admitted to the Neonatal Intensive Care Unit? What are the factors that are associated with the appearance of the lesions? This study aimed to investigate the occurrence of skin lesions in hospitalized newborns in the Neonatal Intensive Care Unit of a public hospital in Brasilia, Federal District, as well as identify the characteristics of the lesions and the factors associated to its appearance.

MATERIALS AND METHODS

This is a quantitative, descriptive study, a prospective approach, performed in the Neonatal Intensive Care Unit of the Maternal Hospital of Brasilia, Federal District, in the period from September to December 2014. The research project was evaluated by the Ethics Committee in Research of the Education and Research Foundation in Health Sciences (FEPECS), being approved on September 8, 2014 (Protocol No. 781.809). The data collection started only after receiving the assent to their execution and all parents and/or guardians of newborns were informed about the objectives and methodology of the survey.

The convenience sample consisted of 104 newborns of both sexes admitted to the Intensive Care Unit of the Maternal Hospital of Brasilia. including newborns who had a maximum of 28 days at the time of admission and remained hospitalized for a minimum of 24 hours. Were excluded from the sample newborns whose legal representatives refused to sign the Informed Consent Form (TCLE) or withdrew their consent.

The data collection was carried out using an adapted instrument aiming to characterize the study population and the identification of skin lesions acquired during hospitalization of newborns⁽⁶⁾. The referred instrument contained two parts: during the first part were collected sociodemographic and clinical data from newborns by analyzing the records whose variables included gender, place of origin, birth weight and length, type of delivery, medical diagnostics, newborn accommodation, therapeutic conduct, among others; in the second part were collected data on skin lesions acquired during hospitalization and the factors associated with its emergence through direct observation of newborns during the sector's routine procedures such as body care, diapering, venipuncture and/or arterial, catheterizations, adhesive tapes withdrawals and electrodes, etc., in order to identify changes that could arise in the skin and would be suggestions of injury, whose variables were date of identification of the lesion, days old when the lesion was identified, classification of the lesion, likely factor that caused the injury and its location.

The data was inserted into a database built in the Statistical Package for the Social Sciences® (SPSS) version 21.0 and is used to double checking for early detection of errors in the tab, making it easier to fix if needed. Descriptive analysis was performed where the categorical variables were described using absolute and relative frequency and the quantitative variables by average and standard deviation.

RESULTS

The sociodemographic profile of newborns studied revealed a predominance of females, characterizing 55.8% of the sample and the other 44.2% of newborns were male. Of the 104 infants, 65.4% were from the Federal District, 25% were from areas surrounding the Federal District and 9.6% were from other states. Table 1 shows the profile of infants in the sample.

Table 1: Distribution of newborns per characteristics at birth, Brasilia-DF, 2014.

Characteristics	No.	%	Average	Standard deviation
Gender				
Male	46	44.2	-	-
Female	58	55.8		
Birth weight (g)				
Until 999g	20	19.3		
From 1000 to 2499g	52	50.0	1.872	893
From 2500 to 4000g	32	30.7		
Birth length (cm)				
20 to 30 cm	3	2.9		
31 to 40 cm	49	47.1	41.3	5.8
41 to 54 cm	52	50.0		
Type of delivery				
Normal	38	36.5	-	-
Cesarean	66	63.5		

Source: research data, 2014.

In this study, 57.7% of newborns remained hospitalized in the Intensive Care Unit for a shorter period than 30 days, 25% remained hospitalized between 30 and 60 days, and 17.3% were hospitalized over 60 days. Regarding medical diagnostics, 71 neonates were premature and 33 newborns were term.

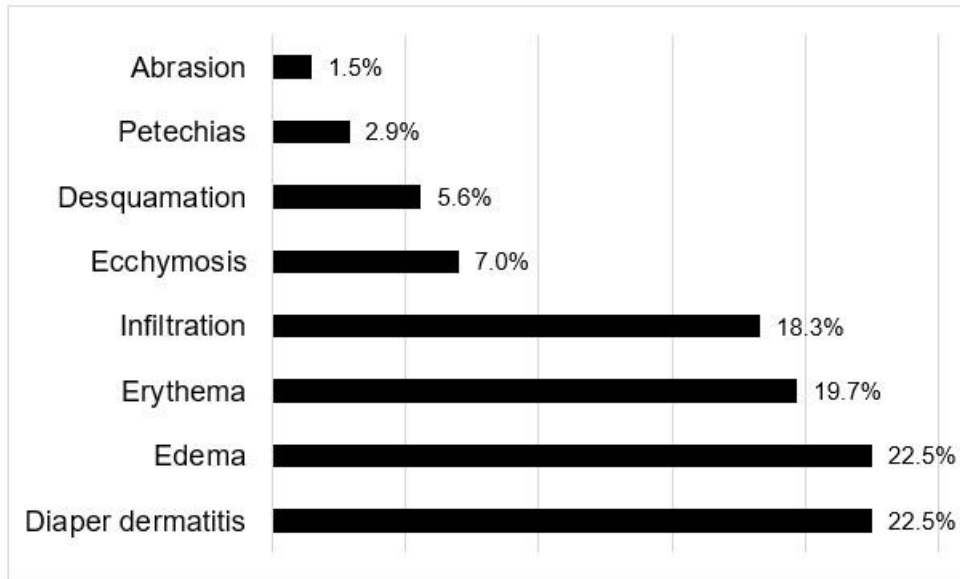
Considering diagnostic impressions, 69.2% of the sample presented respiratory distress syndrome (RDS). The category "other diagnoses" appeared on a larger scale (89.4%), standing out among them the neonatal jaundice (25.9%), early or late onset sepsis (35.5%), congenital heart disease (28.8%) and congenital malformations (15.3%). Among the congenital malformations, there was gastroschisis and omphalocele as the most frequent. Some diagnoses came in lower percentage such as meconium aspiration (1%), the risk of hypoglycemia (2.9%), perinatal asphyxia (4.8%) and risk of infection (4.8%), this being related to diagnosis and perinatal risk of congenital infections.

Regarding the therapeutic management, 60.6% of the newborns were accommodated in the incubator, 36.5% in heated crib and only 2.9% in common cradle. It was also noted the prevalence of intravenous hydration (54.8%), antibiotics (51%) and parenteral nutrition (49%). Then we had the use of mechanical ventilation (27.9%), phototherapy (26%) Continue Positive Airway Pressure (15.4%) oxy-hood (11.5%) and Current O₂ (10.6 %).

On the occurrence of skin lesions, 40.4% of infants had injuries, some of which have developed more than one injury during data collection. The most frequent lesions were

diaper dermatitis (22.5%), edema (22.5%), erythema (19.7%) and infiltration (18.3%), followed by ecchymosis (7%) and desquamation (5.6%) as Graph 1 demonstrates.

Chart 1: Classification of skin lesions of newborns, Brasilia-DF, 2014.



Considering the likely factor that caused the injuries, 12.5% were caused by fluid leakage, 7.7% infection, 7.7% for an undetermined reason, 4.8% by venous and/or arterial puncture and 20.2 % occurred for other reasons, such as surgical procedures (correction for gastroschisis, omphalocele or myelomeningocele) and contact with deletions (in case of diaper dermatitis). Most lesions appeared on the first day of life of the newborn, showing the various procedures performed in newborns, especially when it is admitted to the Neonatal Intensive Care Unit.

The regions where more emerged skin lesions were perianal (16.3%), followed by the upper right and left limb (both 8.7%), abdomen (7.7%), face (5.8%) thorax (4.8%), right lower limb (4.8%), left lower limb (3.8%) and neck (1.9%).

DISCUSSION

The practices performed in Neonatal Intensive Care Units include invasive procedures, use of skin solutions for antiseptics, maintaining the temperature and humidity of the environment in the newborn position, body care, attachment and/or removal of bumper devices for hemodynamic monitoring and life support, among others, predisposing neonates to lesions, as evidenced by other studies^(4,7).

In this study, 68.3% of the newborns were premature. Premature infants may have several serious complications that require special care, given their particularities, representing the most attended population in the Neonatal Intensive Care Unit. One of these complications is a predisposition to the appearance of skin lesions⁽⁶⁾. Thus, conditions that make it difficult to change position, multiple catheters, surgical wounds, ostomy, mechanical ventilation, vasopressor medications, among others, are considered risk factors for the onset of skin lesions, especially in the newborn preterm⁽⁸⁾.

Concerning birth weight, most of the sample was between 1,000 and 2,499 grams. For Fontenele, weight is an important parameter to be considered when dealing with skin lesions, since premature and low weight newborns have loose skin and without elasticity, and immature subcutaneous tissue, causing to occur thermal frequency instability, dehydration, among others, thus increasing the chances of onset of injury⁽⁶⁾. In Fontenele and Cardoso study⁽⁷⁾, 36 of 137 infants studied had skin lesions being hematoma the most frequent lesion (46%), followed by erythema (18%), abrasions (12%) and ecchymosis (10%), which differs from the results of this study, where the diaper dermatitis and edema had the highest incidence (both 22.5%), and erythema (19.7%) second. In a study of 40 newborns admitted to the Intermediate Care Unit and Neonatal ICU of a university of Paraná hospital⁽⁹⁾, the most frequent injury was the diaper dermatitis, corroborating the data found in this study and highlighting the need to carry out training activities of professionals so that it can prevent and/or early detect skin lesions, aiming the improvement of quality for nursing assistance⁽⁷⁾.

The diaper dermatitis lesions which occur by skin contact with urine and stools, which causes the urea to be converted into ammonia, making the pH of the region more alkaline. It is believed that the use of antibiotics can favor the onset of diaper dermatitis, because these drugs alter the consistency of stools⁽¹⁰⁾. To prevent its occurrence, diaper changes should be performed whenever there is dirt using soft cloth or cotton and water to clean the perianal region of the newborn once the use of chemicals can cause skin irritation, especially in extremely premature infants^(8,10).

Edema as well as erythema, bruising and infiltration were associated, in most cases to the liquid leakage, insertion site infection of peripheral venous catheter and/or central, and infection at the surgical site and the venipuncture and/or arterial. A study in Rio de Janeiro found similar results⁽¹¹⁾. Often, critically ill patients and premature neonates require intravenous therapy for more than seven days, which comprises the use of drugs that irritate its vascular endothelium, making it difficult to maintain venous access and increasing the risk of leakage, fluid leakage and phlebitis and can lead to multiple punctures during hospitalization, resulting in integumentary system lesions⁽¹¹⁾, which demonstrates the need of periodical assessments of venal accesses on this group of patients.

The regions where more emerged skin lesions in neonates included in this study were perianal, member upper right and left, abdomen, face, chest, right leg and left neck and cephalic region. In a study of preterm infants in Fortaleza, Ceará, it was identified that the body area with greater incidence of lesions was on the face, especially on those born between 30 and 35 weeks, weighing less than 1,000 grams⁽⁵⁾. Other places like the forehead, upper and lower limbs, abdomen, buttocks and ear were also identified as areas where injuries commonly arise during hospitalization of newborns in Neonatal Intensive Care Units^(5,8).

As study limitation, we can refer to the quality of nursing notes and the presence of the researchers for data collection only in the afternoon in the Neonatal Intensive Care Unit of the Maternal Hospital of Brasilia. Some identified injuries were not registered in the records of newborns and may result in omission of relevant information. It is suggested awareness of the nursing team about the trustworthy record of information related to the patient during hospitalization, so that it has a record and a truer observation related to skin lesions.

Skin lesions, regardless the type, location and trigger, can cause cross-infection, increased length of stay, greater complexity of care and changes in health enhancement of the newborn⁽⁷⁾. It is essential that beyond the knowledge of the anatomical and physiological characteristics of the skin of newborns, nurses identify risks to the appearance of lesions, aiming at improving the quality of care and thus making it more human, thus reducing the complications injuries, length of hospital stay, mortality, costs for treatment, and reduce the physical and emotional distress of newborn babies in critical conditions and their families.

It is noticed that the care of the newborn's skin is a critical component in neonatal care and should be of concern to the nursing staff, since the intact skin forms a barrier against external agents and protects the internal structures of the child, as well as indicating the problems caused by hospitalization, such as infections and metabolic disorders. Therefore, it is necessary for nurses to know the characteristics of the soft tissue of the newborn system to evaluate it in a judicious manner and thus identify the risks related to the newborn's characteristics and the chosen therapy, which are important factors for directing the actions of nursing⁽¹²⁾.

CONCLUSION

In this study, it was possible to identify skin lesions in neonates during their stay in the Neonatal Intensive Care Unit, as well as their characteristics and associated factors. Our results show the need to create protocols and/or use of tools aimed at maintaining the newborn's skin integrity, and can be useful tools for evaluating the cutaneous system of the newborn and thus identify any changes, preventing or reducing its occurrence and its consequences.

It was observable the small number of national studies on incidence and prevalence of skin lesions in neonates admitted to the Neonatal Intensive Care Units. Thus, it is expected more detailed studies to be carried out in this area and that the facilities for the care of newborns in critical condition may use the data provided by this research to assist in the targeting of interventions and decision making process related to skin integrity and the appearance of lesions.

Nurses are the professionals responsible for several key actions for the prevention and treatment of skin lesions. These actions should be individualized, supported in scientific knowledge and, especially, have their approaches at work in integrated team, and intensive monitoring of affected newborns, in order to prevent and/or reduce the skin lesions in this part of the population during their stay in the Neonatal Units.

REFERÊNCIAS

1. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Saúde da criança: crescimento e desenvolvimento. Cadernos de Atenção Básica, nº 33. Brasília: Ministério da Saúde, 2012.
2. Organização Mundial de Saúde. Assembleia Mundial de Saúde. Resoluções WHA20.19 e WHA43.24 de acordo com o artigo 23 da constituição da Organização Mundial de Saúde. Disponível em: <http://www.datasus.gov.br/cid10/V2008/WebHelp/definicoes.htm>
3. Ministério da Saúde (BR). Portaria nº 930 de 10 de maio de 2012. Define as diretrizes e objetivos para a organização da atenção integral e humanizada ao recém-nascido grave ou potencialmente grave e os critérios de classificação e

habilitação de leitos de Unidade Neonatal no âmbito do Sistema Único de Saúde (SUS). Disponível em:

http://bvsmis.saude.gov.br/bvs/saudelegis/gm/2012/prt0930_10_05_2012.html

4. Martins CP, Tapia CEV. A pele do recém-nascido prematuro sob a avaliação do enfermeiro: cuidado norteando a manutenção da integridade cutânea. Rev Bras Enferm., 2009, set/out, 62(5): 778-83. Available from: <http://www.scielo.br/pdf/reben/v62n5/23.pdf>.
5. Fontenele FC, Pagliuca LMF, Cardoso MVLML. Cuidados com a pele do recém-nascido: análise de conceito. Esc Anna Nery (impr.) 2012, jul/set; 16(3): 480-85. Available from: <http://www.scielo.br/pdf/ean/v16n3/08.pdf>.
6. Fontenele FC. Lesões de pele em recém-nascidos na Unidade de Terapia Intensiva Neonatal. Dissertação (mestrado). Universidade Federal do Ceará, Fortaleza, 2008.
7. Fontenele FC, Cardoso MVLML. Skin lesions in newborns in the hospital setting: type, size and affected area. Rev Esc Enferm USP 2011; 45(1):127-33. Available from: http://www.scielo.br/pdf/reeusp/v45n1/en_18.pdf.
8. Tamez RN. Enfermagem na UTI neonatal: assistência ao recém-nascido de alto risco. 5. ed. Rio de Janeiro: Guanabara Koogan, 2013.
9. Migoto MT, Souza SNDH, Rossetto EG. Lesiones de piel en bebés internados en una unidad neonatal: estudio descriptivo. Online braz j nurs, 2013 June; 12(2): 377-92. Available from: http://www.objnursing.uff.br/index.php/nursing/article/view/4042/html_2.
10. Santos SV, Costa R. Prevenção de lesões de pele em recém-nascidos: o conhecimento da equipe de enfermagem. Texto Contexto Enferm, 2015; 24(3): 731-9. Available from: http://www.scielo.br/pdf/tce/v24n3/pt_0104-0707-tce-24-03-00731.pdf.
11. Gomes ACR, Faria JCO, Silva CAG, Avelar AFM, Gamarra CJ, Rodrigues EC. Assessment of phlebitis, infiltration and extravasation events in neonates submitted to intravenous therapy. Esc Anna Nery (imp.), 2011; 15(3): 472-479. Available from: <http://www.scielo.br/pdf/ean/v15n3/a05v15n3.pdf>.
12. Nepomuceno LMR, Kurcgant P. Use of a quality indicator to base a professional nursing qualification program. Rev Esc Enferm USP 2008; 42(4): 664-71. Available from: http://www.scielo.br/pdf/reeusp/v42n4/en_v42n4a07.pdf

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