

Nursing care process in an infant with broncho-obstructive syndrome (BOS) pneumonia hospitalized in the emergency room from a hospital in Lima, 2021

[Proceso de cuidado de enfermería en infante con Síndrome Obstructivo Bronquial (SOB) neumonía hospitalizado en emergencia de un hospital de Lima, 2021]

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Resumen

El presente trabajo, desarrolla el proceso de atención de enfermería (PAE) a un paciente pediátrico, con el objetivo de identificar problemas y gestionar el cuidado integral a infante con diagnóstico Síndrome Obstructivo Bronquial (SOB)-Neumonía hospitalizado en el área de emergencia. Estudio de caso único, enfoque cualitativo método el PAE. La recolección de los datos se realizó a través de la técnica de observación, examen físico y como instrumento el marco de valoración por 11 patrones funcionales de Marjory Gordon, identificándose 5 Diagnósticos de Enfermería priorizándose tres de ellos: Limpieza ineficaz de las vías aéreas relacionado con mucosidad excesiva, evidenciado por sonidos respiratorios anormales crepitantes, sibilancias, tos persistente con abundante secreciones amarillentas y densas en cantidad regular, frecuencia respiratoria 46 respiraciones por minuto. Deterioro del intercambio de gases asociado a Cambios de la membrana alveolo-capilar, evidenciado por disnea, alcalosis respiratoria descompensada pH: 7.50, pCO₂: 33 mm Hg, hipoxemia pO₂: 88 mm Hg y taquicardia FC: 126 x', saturación de oxígeno 86%. Hipertermia asociada a enfermedad secundaria a SOB Neumonía, evidenciado por Piel caliente al tacto, taquicardia 146 x', Temperatura: 38°C la planificación con la taxonomía II NANDA I NOC (or Nursing Outcomes Classification) y NIC (Nursing Interventions Classification), se ejecutaron etiquetas de intervención con actividades programadas siendo luego evaluadas con etiquetas NOC e indicadores respectivamente Los resultados fueron +1, +1, +3. Concluyendo que la gestión del cuidado, aplicando PAE en un paciente pediátrico con SOB-neumonía fue eficaz, indica que el niño, no presento complicación alguna durante los turnos atendido en el estudio

Palabras clave: Proceso de cuidado de enfermería, SOB neumonía, hospitalizados y área de emergencia.

Abstract

The present work develops the nursing care process (NCP) to a pediatric patient, with the aim of identifying problems and managing comprehensive care for infants with a diagnosis of broncho-obstructive syndrome (BOS)-Pneumonia hospitalized in the emergency area. Single case study, qualitative approach, NCP method. The data collection was carried out through the observation technique, physical examination and as an instrument the assessment framework for 11 functional patterns of Marjory Gordon, identifying 5 Nursing Diagnoses prioritizing three of them:

Ineffective cleaning of the airways related to excessive mucus, evidenced by abnormal respiratory sounds crackles, wheezing, persistent cough with abundant yellowish and dense secretions in regular quantity, respiratory rate 46 breaths per minute. Impaired gas exchange associated with changes in the alveolar-capillary membrane, evidenced by dyspnea, decompensated respiratory alkalosis, abnormal arterial pH 7.50, pCO₂: 33 mm Hg, hypoxemia pO₂: 88 mm Hg and HR tachycardia: 126 x', oxygen saturation 86%. Hyperthermia associated with disease secondary to BOS Pneumonia, evidenced by skin hot to the touch, tachypnea (146 x'), Temperature: 38 °C planning with taxonomy II NANDA I NOC (or Nursing Outcomes Classification) and NIC (or Nursing Interventions Classification), intervention labels were executed with programmed activities being then evaluated with NOC labels and indicators respectively. The results were +1, +1, +3. Concluding that the management of care, applying NCP in a pediatric patient with BOS-pneumonia was effective, indicates that the child did not present any complications during the shifts attended in the study.

Keywords: Nursing care process, BOS pneumonia, hospitalized and emergency area.

1. Introduction

According to the World Health Organization, global pediatric studies on pneumonia report a higher frequency in male children with an average age of 8.9 years and an overall mortality of 0.09% (9,10,11). In Ecuador, the incidence of children born with tuberculosis is more than 40 per 100,000 (Bunces et al., 2021). BOS pneumonia is one of the leading single causes of infant mortality worldwide. Estimating a mortality of 920,136 children under 5 years of age in 2015, presumably 15% of all deaths in this group of children in the world. This disease afflicts children and their families around the world, with a higher prevalence in Africa and South Asia. They can be protected by simple interventions and treated with low-cost, low-tech medication and care (World Health Organization, 2019).

BOS is the condition that occurs most frequently in infants under 3 years of age, decreasing by 50% in children 5 years of age (4-6). It is considered one of the diseases with the highest demand for care at the primary level, both in the emergency department and in hospitalization (Almanza Mio, 2020). The Demographic and Family Health Survey (ENDES, 2019) mentions that the proportion of children under five years of age with pneumonia in rural areas has a prevalence of 16.5% higher than in urban areas, which is 14.6% (Ministry of Health, 2020).

In this sense, nursing professionals focus their work on humanized care based on the Nursing Care Process (NCP), through which they assess, diagnose, plan, execute and evaluate their activities, considering the integral, total and safe care, as well as the continuity required by patients in different periods and in different contexts, providing a process of exchange between the caregiver and being cared for (Miranda-Limachi et al., 2019).

"Pneumonia is a type of acute respiratory infection that affects the lungs. The lungs are made up of small sacs, called alveoli, which in healthy people fill with air when breathing. The alveoli of pneumonia sufferers are filled with pus and fluid, which makes breathing painful and limits oxygen uptake" (World Health Organization, 2019).

On the other hand, the most frequent and dangerous cause of BOS is Respiratory Syncytial Virus (RSV), in addition to Parainfluenza, Adenovirus, Influenza, Rhinovirus, in some cases Mycoplasma; in a pneumonia is the bacterium *Streptococcus pneumoniae*, depending on the environment where it was acquired, as well as the severity and host factors, it is also originated by other pathogens (bacteria or virus), in the case of younger patients, as is the case of Mycoplasma pneumoniae. There are also other agents that cause this disease such as

Staphylococcus aureus, *Haemophilus influenzae*, gram-negative enterobacteria, or Chlamydia pneumoniae, which are more frequent in adult patients.

Regarding the pathophysiology of BOS pneumonia Abanto and Anhuamán (2019) mention that according to the physiological peculiarities of the pediatric patient and their level of immune maturity, together with the rapid inflammatory response of the lymphatic tissue, will facilitate the emergence of respiratory infections. In children under 5 years of age, the submucosa is more lax, edematous and its inflammatory reaction is more diffuse, its Eustachian tube is shorter and wider, facilitating the proliferation of the middle ear infection; Waldeyer's lymphatic ring is often hyperplastic, altering the mechanism of respiration.

The clinical manifestations are the result of the systemic and local inflammatory response to the infection and are characterized by a cascade of infectious manifestations such as fever, loss of appetite, vomiting, weight loss and general malaise. Within the respiratory symptomatology, the initial cough is a dry and productive cough, it can also present inconstant signs of respiratory failure manifested by nasal flaring, supra-sternal, inter- and subcostal tugging, xiphoid retraction, dyspnea and even cyanosis. Within the physical clinical syndromes of condensation, rarefaction, atelectasis, pleural effusion or mixed, depending on the agent and complications at pleuropulmonary level, and presence of bronchioalveolar rales (Amador, 2016).

Regarding treatment, when the infection is caused by bacteria, it is treated with antibiotics. The antibiotic of choice is amoxicillin, which is a beta-lactam antibiotic, bactericidal, which acts by inhibiting the last stage of the bacterial wall synthesis. In most cases oral antibiotics are prescribed in health centers. This pathology can be diagnosed and treated with inexpensive oral antibiotics in the community by trained community health workers. In severe cases, it is recommended that the patient be hospitalized (World Health Organization, 2019).

It should be noted, that the role of the emergency nurse specialist is the action of care that allows him/her to provide protection, helping the patient to improve and preserve life, to help him/her overcome his/her illness, the suffering he/she suffers and his/her pain. Since children when they have an illness and are hospitalized, their life routine changes, having a loss of their autonomy, moving away from their loved ones since they are in a completely new environment, they may feel pain, fear, stress, anxiety due to the change, being immersed in an unknown and strange world (Galmés, 2017).

2. Materials and methods

The research was elaborated with a qualitative approach, type of study was a single case study and the method was the nursing care process, which is considered as a scientific method that enables the nurse to carry out care plans in a direct and individualized way, in a rational, logical and systematic manner; considered as the basis of the practice of the profession, because it is the application of the scientific method in the care practice, where its importance lies (Vele Bacuilima & Veletanga León, 2015). For data collection, the technique of observation, physical examination and interview was used, and the Margory Gordon assessment framework was used as the instrument; once the data were obtained, the nursing diagnoses were enunciated, and the planning was elaborated using the NANDA-NOC-NIC taxonomy.

Nursing care process

Assessment

General data

Name: S.B.G.C.

Sex: Male

Age: 2 years old

Days of nursing care: 2

Date of assessment: 10/08/2020

Medical diagnosis: BOS Pneumonia

Reason for admission: Infant patient admitted to the service, coming from outpatient clinic, in very poor health, breathing with great difficulty, presenting hyperthermia.

Functional health patterns

Pattern I: Perception - Health Management:

Male infant patient, 2 years old, with medical diagnosis BOS-PNEUMONIA, in regular state of hygiene, does not suffer from allergy to any medication, incomplete vaccination schedule (complete schedule up to 6 months), mother refers her child began to present fever 3 days before hospitalization, was taken to health center where they prescribe treatment with Amoxicillin, seeing no improvement and increased respiratory distress, she decides to bring him to the hospital. The mother knows her son's diagnosis and the treatment he is receiving.

Pattern II: Nutritional - Metabolic:

Infant patient presents skin warm to the touch, oral mucous membranes hydrated, complete dentition for his age, swallows slowly, but without difficulty, skin hydrated, pale, cold, no lesions, temperature (axillary): 38 °C. Diet: Complete: weight: 13.100 kg, height: 91.0 cm, BMI: 13.10 (Normal), HCO₃: 22 meq/l.

Pattern III: Elimination:

Bladder elimination: patient presents spontaneous diuresis with diaper support.

Bowel elimination, bowel movements with normal frequency of pasty consistency.

Pattern IV: Activity - Exercise:

Respiratory activity: infant patient presenting shortness of breath, tachypneic FR: 46 X', frequent cough expectorated yellowish and dense tracheo bronchial secretions in regular quantity, oxygen saturation: 86% without oxygen and 94% with oxygen, receives ventilatory support by mask to simple at 5 liters per minute. On auscultation of PCA, crackles are heard, he also presents subcostal and intercostal pull. According to the results of arterial blood gas analysis, he presented decompensated respiratory alkalosis (pH: 7.50, pCO₂: 33 mm Hg, pO₂: 88 mm Hg).

Circulatory activity: Heart rate of 126 x', capillary filling greater than 2 sec.

Self-care capacity: Patient does not ambulate, is in absolute rest, muscle tone and strength preserved in both upper and lower limbs. Requires assistance for hygiene, feeding, dressing and bathing.

Pattern V: Sleep - Rest:

Infant patient, with difficulty sleeping, sleeps at intervals due to coughing, accompanied by restlessness and tearfulness.

Pattern VI: Cognitive - Perceptual:

Patient responds to being called by name, reacts to tactile and auditory stimuli. No alteration of taste and smell. No signs or symptoms of any neurological alteration. The patient communicates verbally and with gestures.

Pattern VII: Self-perception - Self-concept:

The patient cannot explain his own perception due to his age and level of cognition. Restless behavior, makes constant movements in bed, refuses to cooperate with the placement of any device (Aero camera).

Pattern VIII: Role - Relationships:

Pattern not assessable due to patient's age.

Pattern IX: Sexuality - Reproduction:

Presents infant presents male genitalia, with regular hygiene.

Pattern X: Adaptation - Tolerance:

Uneasy patient since admission, presents difficulty adapting to the environment, does not interact very well with the nursing staff when care is administered, only calms down when his mother visits him. Mother reports feeling uneasy and anxious, as she despairs when she sees her son

struggling to breathe and when he has difficulty expelling secretions. She is not yet accustomed to the hospital environment, but she interacts and cooperates actively with all health personnel.

Pattern XI: Values - Beliefs:

The patient's family is of Catholic religion. They are not very devout, there are no restrictions due to their religion to follow medical indications (blood transfusions or others).

Nursing diagnoses

First diagnosis

Diagnostic label:

Ineffective airway clearance (00031).

Defining characteristics:

Abnormal breath sounds (Crackles), persistent cough with abundant yellowish, thick secretions in regular amount, FR: 46 breaths per minute.

Related factor(s)

Excessive mucus

Diagnostic Statement

Ineffective airway clearance related to excessive mucus, evidenced by abnormal breath sounds (crackles, wheezing), persistent cough with abundant dense yellowish secretions in regular amount, FR: 46 breaths per minute (00031).

Second diagnosis

Diagnostic label:

Impaired gas exchange (00030).

Defining features:

Dyspnea, abnormal arterial blood gases: decompensated respiratory alkalosis abnormal arterial Ph (Ph: 7.50), pCO₂: 33 mm Hg, hypoxemia (pO₂: 88 mm Hg), oxygen saturation 86% and tachycardia HR: 126 x'.

Associated condition:

Alveolar-capillary membrane changes.

Diagnostic Statement:

Impaired gas exchange associated with Alveolo-capillary membrane changes, evidenced by dyspnea, abnormal arterial blood gases: decompensated respiratory alkalosis abnormal arterial Ph (Ph: 7.50), pCO₂: 33 mm Hg, hypoxemia (pO₂: 88 mm Hg) and tachycardia HR: 126 x', oxygen saturation 86% (00030).

Third diagnosis

Diagnostic label:

Hyperthermia (00007).

Defining features:

Skin warm to touch, tachypnea (146 x'), T°: 38°C.

Related factor(s)/risk factor:

Illness secondary to BOS Neumonia

Diagnostic Statement

Hyperthermia associated with illness secondary to WNBS pneumonia, evidenced by Skin warm to touch, tachypnea (146 x'), T°: 38°C (00007).

Planning

NOC

First diagnosis

Ineffective airway clearance related to excessive mucus, evidenced by abnormal breath sounds (crackles, wheezing), persistent cough with abundant yellowish and dense secretions in regular amount, FR: 46 breaths per minute (00031).

NOC Results

(0410) Respiratory Status: Airway patency

Indicators

041004 Respiratory rate

041007 Abnormal respiratory noises

041012 Ability to clear secretions

041019 Cough

Second diagnosis

Impaired gas exchange associated with alveolar-capillary membrane changes, evidenced by dyspnea, abnormal arterial blood gases: decompensated respiratory alkalosis, abnormal arterial pH (pH: 7.50), pCO₂: 33 mm Hg, hypoxemia (pO₂: 88 mm Hg) and tachycardia HR: 126 x', oxygen saturation 86% (00030).

NOC Results

Respiratory status: Gas exchange (0402)

Indicators

040203 Dyspnea at rest

040208 Partial pressure of oxygen in arterial blood (PaO₂)

040209 Partial pressure of carbon dioxide in arterial blood (PaCO₂)

040210 Arterial pH

040211 Oxygen saturation

Third diagnosis

Hyperthermia associated with illness secondary to BOS Neumonia, evidenced by warm skin to touch, tachypnea (146 x'), T°: 38°C (00007).

Expected Results:

Thermoregulation (0800)

Indicators

080001 Increased skin temperature

080017 Apical heart rate

080019 Hyperthermia

CIN:

First diagnosis

NIC: (3140) Airway management

Activities

314001 Position patient to maximize ventilatory potential: sem Fowler position.

314002 Perform chest physiotherapy if indicated.

314003 Auscultate breath sounds noting areas of decreased or absent ventilation and the presence of adventitious sounds.

314004 Perform endotracheal or nasotracheal suctioning, as appropriate 314005 Administer bronchodilator bronchodilator bronchoscopy if indicated

314005 Administer bronchodilators, as appropriate 314005 Administer bronchodilators, as appropriate

314006 Teach the patient how to use prescribed inhalers

314007 Administer nebulizer therapy

314008 Regulate fluid intake

Second diagnosis

NIC: (3320) oxygen therapy

Activities

332001 Administer supplemental oxygen with single mask at 5 liters per minute.

332002 Monitor effectiveness of oxygen therapy through pulse oximetry, arterial blood gases

NIC: (1914) Management of acid-base balance: Respiratory alkalosis

191401 Position patient to facilitate adequate ventilation: sem Fowler's position

191402 Monitor respiratory pattern

191403 Monitor pH, PaCO₂, and HCO₃ trends

191404 Obtain specimens for laboratory analysis of acid-base balance: arterial blood gases.

191405 Monitor for the presence of neurologic and/or neuromuscular manifestations of respiratory alkalosis.

Third diagnosis

NIC: (3740) Management of fever

Activities

374001 Monitor temperature and other vital signs

374002 Observe skin color and temperature

374003 Encourage drinking fluids

374004 Apply a warm sponge bath gently

374005 Monitor for fever-related complications and signs and symptoms of the condition causing the fever: seizure, decreased level of consciousness.

374006 Administer antipyretic medications, antibiotics and antichills agents.

Evaluation

First diagnosis:

Baseline score: 3

Change Score: +1

Second Diagnosis:

Baseline Score: 3

Change Score: +2

Third Diagnosis:

Baseline Score: 2

Change Score: +1

3. Results

Considering the baseline score and change score, a change score of +1 +2 and +1 was achieved as a result of the administrative interventions in the three priority diagnoses.

4. Discussions

According to the North American Nursing Diagnosis Association - NANDA (2018-2020), it indicates that it is the inability to eliminate secretions or obstructions of the respiratory tract which affects and makes the airways are not permeable. Likewise, the accumulation of secretions increases the resistance of the airway and the respiratory work; which manages to manifest itself with hypoxemia, hypercapnia, atelectasis and infection. This difficulty in eliminating secretions is due to the consistency and quantity or inability to cough (Romero et al., 2017).

In this same line, there are other acute and chronic respiratory pathologies that produce the accumulation of secretions that can happen by mechanisms such as increased mucus secretion, changes in mucociliary transport or ineffective cough. Improper management of respiratory tract secretions helps with the progression of many morbidities, which include mucus plugging, obstructive atelectasis and progression of lung injury (Cortes-Telles & Che-Morales, 2019).

It is important to highlight the defining characteristics identified in the patient under study were: abnormal respiratory sounds (crackles, wheezing), persistent cough with abundant yellowish and dense secretions in regular quantity, FR: 46 breaths per minute. In relation to the factors related to the diagnosis are: foreign body in the airways, exposure to smoke, passive smoking, excessive mucus, retention of secretions and smoking. In the case of the infant under study, he presented excessive mucus (Cortes-Telles & Che-Morales, 2019).

For Butcher et al. (2018) the nursing intervention used was: airway management (3140). The following activities were considered.

The patient was placed in the semifowler position, to maximize ventilation potential. The semifowler position favors breathing improvement, through chest expansion and oxygenation, thus facilitating breathing (Mena et al., 2016).

In the case, thoracic physiotherapy was performed. It allows improving the management of airway secretions for their elimination, thus improving pulmonary ventilation (Peñaloza & Carbo, 2018-2019).

In addition, respiratory sounds were auscultated, observing the areas of decreased or absent ventilation and the presence of adventitious sounds. Through the auscultation of the lung fields, the noises generated in the airway through the air flow are evaluated, since it provides immediate and dynamic information, allowing to detect abnormal sounds in time and to be able to act upon them (Bertrand et al., 2020).

Endotracheal or nasotracheal suctioning was also performed. It is an intervention focused on removing secretions, blood residues, gastric contents that are in the bronchi, because the patient cannot eliminate them by himself.

Administer bronchodilators, as appropriate. Bronchodilators are drugs that have action on the muscle of the bronchial tube allowing its relaxation, also improves by expanding the diameter of the bronchus, thus improving airflow (Araujo, 2019).

Teach the patient to use the prescribed inhalers. Inhalation induces coughing and expectoration, improving airway obstruction, having positive effects on the patient's clinic (Gallegos, 2020). Administer treatment with nebulizer. Nebulization is a technique that allows humidifying, fluidizing, mobilizing and eliminating secretions from the respiratory tract (Aguilar et al., 2016).

Impaired gas exchange

It is the excess or deficit of oxygenation and/or in the elimination of carbon dioxide in the alveolar capillary membrane (NANDA, 2018 - 2020).

For Pascoal et al. (2015), argues that respiratory tract infections are very common diseases in children and are the ones that favor high morbidity and mortality rates in children under five years of age. This age group is the most affected, due to the susceptibility and lack of maturity of the respiratory tract. These pathologies are classified as high and low, differentiated by the level of respiratory compromise. Low IR, affecting the lower airways, may dilate for a longer period of time and if not treated in time, the child's life may be at risk.

The defining characteristics evidenced by the infant were: dyspnea, abnormal arterial blood gases: decompensated respiratory alkalosis abnormal arterial pH (pH: 7.50), pCO₂: 33 mm Hg, hypoxemia (pO₂: 88 mm Hg) and tachycardia HR: 126 x', oxygen saturation 86% (00030) (Pascoal et al., 2015),

For the NANDA (2018 - 2020), indicates that the related factors for this diagnosis are changes in the alveolar capillary membrane and imbalance in perfusion ventilation, in the case of the patient under study was related to changes in the alveolar capillary membrane since it is a patient who has as pathology BOS Neumonia whose main feature is to edematize the mucosa of the alveolus and produce purulent secretions thus hindering the exchange of gases.

To help the patient solve the respiratory problems, the interventions (3320) oxygen therapy and (1914) management of basic acid balance: respiratory alkalosis (Butcher et al., 2018) were used. The following activities were performed:

Firstly, we positioned the patient to facilitate adequate ventilation: semifowler position. the semifowler position, favors the exchange of arterial gases, improving ventilation and diffusion (Pintueles & Suárez, 2019).

Supplemental oxygen was then administered with a single mask at 5 liters per minute. The benefit of oxygen therapy is to alleviate severe hypoxemia, oxygen is administered so that the partial pressure of oxygen rises above 60 mm Hg and oxygen saturation is above 90-92 (Pastor et al, 2017).

In addition, the efficacy of oxygen therapy is monitored through pulse oximetry, arterial blood gasometry. The goal of oxygen therapy is to reverse hypoxemia through oxygen therapy to achieve oxygen partial pressure above 60 mm Hg and basal saturation of 90% without depressing the respiratory center (Estrella Cazalla et al, 2008).

The respiratory pattern was also monitored. Monitoring pH, PaCO₂ and HCO₃ trends. Arterial blood gas is the gold standard for assessing gas exchange and acid-base balance, allowing direct recognition of pH, pCO₂, pO₂, and bicarbonate, base excess, and total hemoglobin concentration, SatO₂. (Pastor et al., 2017).

Therefore, samples were obtained for the laboratory analysis of the acid-base balance: arterial blood gasometry. This is an enormously useful test, as it allows obtaining information, since a correct interpretation of the values obtained will allow the diagnosis of 4 types of pathologies, either acidosis or metabolic or respiratory alkalosis (Moreno et al., 2019).

Hyperthermia

NANDA (2018 - 2020) refers that hyperthermia is body temperature above the diurnonotmal range due to insufficient thermoregulation.

It is a disturbance in the measurement of body temperature, characterized by an increase in core temperature, higher than 38.3 °C. producing an increase in body temperature that exceeds the capacity of the mechanism of thermoregulation of the human body (Picón-Jaimes et al., 2020). Acute fever in children is usually caused by an infection. Children under 3 years of age who show hyperthermia often have bacteria in their bloodstream (bacteremia) (Consolini, 2020).

In this regard, the fever presented by the patient under study was caused by bacterial invasion since his underlying pathology was BOS Pneumonia. Fever plays an integral role in infection control. Hyperthermia should be treated early as it can be the catalyst for febrile seizures in childhood (Consolini, 2020).

According to NANDA (2018 - 2020) indicates that the defining features identified in the infant were: by skin warm to touch, tachypnea (146 x'), Temperature: 38 °C. It also mentions that the associated conditions for this diagnosis are: pharmacological agents, increased metabolic rate, decreased sweating response, illness, ischemia, sepsis and trauma. In the patient's case it was associated with disease due to his pathology.

In order to decrease the patient's temperature and thus prevent complications the intervention (3740) Fever Treatment (Butcher et al., 2018) was considered. The activities were:

First, temperature and other vital signs were monitored. Vital signs are "parameters", which allow us to assess the patient's state of health, detecting any changes that may indicate any real or potential variation in the state of health (Durán, 2017).

Next, skin color and temperature were observed. Because, at the onset of fever, peripheral blood vessels constrict in order to prevent heat loss and subsequently they will dilate to promote heat loss.

In addition, fluid intake was encouraged. Fluid intake is highly recommended to reduce hyperthermia. Evaporation of sweat on the skin surface and to maintain body temperature in the face of hyperthermia, the availability of water is recommended for sweat production (Picón-Jaimes et al., 2020).

A warm sponge bath was also applied carefully. The organism loses heat by conduction mechanisms to a colder body, as in this case water, the other mechanism is the evaporation of the body surface and convection, which is the elimination through the surfaces of the body that is subjected to the bath. (Oré & Sulca, 2018).

Likewise, the presence of fever-related complications and signs and symptoms of the fever-causing condition were also monitored: comicial crisis, decreased level of consciousness. Hyperthermia can increase brain temperature as a result of the production of pro-seizure inflammatory mediators, such as interleukin 1beta, if not acted upon in time can induce seizures (Padilla et al., 2015).

Finally, antipyretic drugs were administered. The primary prescription is the administration of an antipyretic to reduce the temperature and other discomfort of the infant; and thus reduce parental concern about the child's fever (Caro & Vargas, 2019).

5. Conclusions

It is evident that it was possible to manage the NCP to the patient with BOS Pneumonia in its five stages, achieving the reestablishment of health conditions, reinforcing the mother's education for the child's home care.

The nursing care process allowed the use of the scientific method in the care of the pediatric patient based on NANDA - NIC-NOC.

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