



Nursing process for patients diagnosed with accidental tetanus

Processo de enfermagem ao paciente com diagnóstico de tétano acidental

Proceso de enfermería para pacientes diagnosticados con tétanos accidental

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ABSTRACT

Introduction: Accidental tetanus is an infectious disease with systemic repercussions and high lethality. Due to the complexity surrounding the care for these patients, nursing care must be conducted in a systematic, scientific and individualized way. **Objective:** To report the experience of systematization of nursing care to a patient affected by accidental tetanus in the light of the Basic Human Needs theory. **Outline:** This is a descriptive study, an experience report, developed in March 2019 after nursing care for a patient diagnosed with accidental tetanus, admitted to an intensive care unit (ICU) of a public hospital. **Results:** The elaboration of the care plan included information about the risk diagnosis and real diagnosis, nursing interventions and expected results, associated with the affected basic human need. **Implications:** It is well known that the provision of qualified care in the admission of patients with suspected accidental tetanus as well as their proper referral to the ICU contributes to a better prognosis.

DESCRIPTORS

Tetanus; Intensive Care Units; Nursing Care.

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INTRODUCTION

Accidental Tetanus (AT) is defined as a non-contagious infectious disease, caused by the bacterium *Clostridium tetani*, which is commonly found in nature in the spore form, and it may be present in skin, human feces, soil, branches, shrubs, putrefied water, street dust and intestinal tract of animals.¹

AT triggers numerous complications, such as respiratory and urinary infections, sepsis, dysphagia, asphyxia, kidney failure, vertebra and rib fracture, skin injury, neurological impairment, as well as high lethality rate and treatment costs.²

According to data available by the Brazilian Ministry of Health, AT is a universal disease, more common in developing and underdeveloped countries, with a high mortality rate. In Brazil, there is a reduction in the number of AT cases, as, in 1982, 2,226 were confirmed, and between 2013 and 2017, 1,313 cases were registered in the country, being the Northeast region (n=382 ; 29.1%) the most affected.³ The decrease in AT cases, in Brazil, can be explained due to the greater adherence to vaccination services by the population.

The main clinical manifestations of AT are muscle hypertonia, absence of fever or low fever, deep hyperreflexia, and paroxysmal contractures. The primary symptoms are linked to the difficulty in opening the mouth (trismus and sardonic laughter) and walking, with the progress of the disease, there may be difficulty in swallowing (dysphagia), neck stiffness, paravertebral stiffness (opisthotonos) and respiratory failure.³

It is noteworthy that due to the severity of AT and its high lethality rate, it is relevant that health professionals, especially nurses, know the proper care conduct for patients with such pathology. They provide initial care for the victim in the emergency

services and monitor them throughout the hospital stay.

In this sense, the nursing process (NP) is a tool to systematize care, characterized as an instrument that provides nurses with a reasoned care, based on scientific knowledge, making it possible to provide care in a safer and autonomous way.⁴

This process must be guided by a theory. Among the various nursing theories, the theory of Basic Human Needs (BHN), by Wanda Aguiar Horta, stands out, which are divided into three categories, the psychobiological, psychosocial, and psychospiritual. BHN theory evaluates the subject holistically through all their objective and subjective dimensions. In this perspective, through the affected BHN it is possible to implement nursing care, in an individualized way.⁵

In this sense, the present study aims to report the experience of systematization of nursing care to a patient affected by Accidental Tetanus in light of the BHN theory.

METHOD

This is a descriptive study, an experience report, conducted in the period of March 2019 during the curricular practices of a Supervised Curricular Internship II discipline in the Nursing Bachelor course of a Public Higher Education Institution, in Bahia state.

The nursing process was applied during the care provided to a patient diagnosed with AT, admitted to an intensive care unit (ICU) of a general hospital located in the *Território Sertão Produtivo da Bahia*. Data were collected by two nursing students during their curricular practice. To perform the collection, notes were used referring to what was experienced during the care provided for the patient with AT over 35 days, a period that the patient remained in the hospital in the intensive care unit.

To assess the implementation of nursing care, the BHN theory was taken into account. NP phases were systematically covered: data collection, formulation of nursing diagnoses based on NANDA-I taxonomy, care plan, evolution, and evaluation.⁶

RESULTS

The care plan elaboration included information about the domain, diagnosis, nursing interventions, and expected results, relating each nursing diagnosis with the BHN theory, as shown in Charts 1 and 2 presented below.

Chart 1 – Risk diagnoses for patients with Accidental Tetanus. Bahia, Brazil, 2019.

Domain	Nursing Diagnoses NANDA I	Nursing Interventions	Expected Results	Affected Basic Human Needs
3 Elimination and Exchange	Risk of constipation, evidenced by the use of pharmacological agents, changes in dietary patterns, and reduced physical activity.	Control water intake, monitor airborne noise and intestinal eliminations; evaluate the nutrition offered in relation to the prescribed nutritional content.	Ensure adequate intestinal transit.	Psychobiological
11 Safety / Protection	Risk of infection, evidenced by increased environmental exposure to pathogens and invasive procedures.	Use personal protective equipment; follow aseptic practices when performing procedures.	Prevent infections.	Psychobiological
11 Safety / Protection	Risk of injury evidenced by previously injured skin, altered mobility, and lowered level of consciousness.	Monitor for signs of constant muscle spasms; keep beds with elevated heads and cushions.	Prevent the occurrence of injuries.	Psychobiological
11 Safety / Protection	Risk of falling evidenced by decreased mental status, impaired physical mobility, and the presence of acute illness.	Keep stretcher protection rails high; lock the stretcher wheels during procedures.	Prevent fall; prevent complications.	Psychobiological

Source: NANDA nursing diagnoses: definitions and classification 2015–2017.

Chart 2 – Real diagnoses for patients with Accidental Tetanus. Bahia, Brazil, 2019.

Domain	Nursing Diagnoses NANDA I	Nursing Interventions	Expected Results	Affected Basic Human Needs
1 Health Promotion	Ineffective health self-control related to perceived susceptibility, characterized by failure to act to reduce risk factors.	Provide information about preventive methods for infectious diseases.	Decreased exposure to risk factors that contribute to infection.	Psychosocial
2 Nutrition	Imbalanced nutrition, less than bodily needs, related to impaired ability to eat food, characterized by perceived inability to eat food.	Perform hydroelectrolytic control; nutritional monitoring. Plan diet and Nutritional Therapy.	Restore adequate nutrition.	Psychobiological
3 Elimination and Exchange	Impaired urinary elimination related to sensorimotor damage, characterized by inability to spontaneously urinate.	Assess the presence of bladder distention during physical examination; perform rigorous water balance.	Ensure satisfactory bladder elimination.	Psychobiological
4 Activity / Rest	Impaired bed mobility related to the use of sedatives and neuromuscular damage, characterized by impaired ability to reposition in bed.	Provide alignment of the patient's body; keep the bedding clean, dry, and without wrinkles or folds; perform a decubitus change every two hours.	Prevent pain due to incorrect positioning; prevent complications.	Psychobiological
11 Safety / Protection	Impaired skin integrity related to traumatic exposure to an explosive agent, characterized by destruction of skin layers.	Perform dressing, recording aspects of the wound; evaluate the presence of phlogistic signs.	Provide adequate skin recovery.	Psychobiological
12 Impaired Comfort	Impaired comfort related to harmful environmental stimuli, characterized by muscle spasms.	Limit visitation; avoid exposure to exacerbated noise, light sources, and unnecessary tactile stimuli.	Decrease in the amount of muscle spasms.	Psychosocial

Source: NANDA nursing diagnoses: definitions and classification 2015–2017.

DISCUSSION

AT is considered a serious public health problem. It is a vaccine-preventable disease, with an effective vaccine, available in the routine of Basic Health Units throughout the country. However, it is possible to identify a high incidence of patients despite the existing resources in the country.³

Due to the severity of AT and its high lethality rate, it is important to provide a quality emergency care with regard to tetanus prophylaxis and therapy (anti-tetanus serum - ATS, human tetanus immunoglobulin - HTIG, vaccines, and wound characteristics) that allows a better prognosis for the individual with AT.⁷

The diagnosis is strictly clinical, and it is considered a suspected case of AT. Every patient older than 28 days of age who presents one or more symptoms, such as: dysphagia, trismus, sardonic laughter, opisthotonos, localized or generalized muscle contractures, with or without spasms, regardless of vaccination status, history of tetanus and detection or not of a solution of continuity of the skin or mucous membranes.¹

Thus, the care for people with AT should be planned from the time they enter at emergency service until they are admitted to the ICU. Upon admission, it is relevant to proceed with the proper handling of potential tetanus-causing injury, obtain a thorough collection of the patient history, especially with regard to immunization,⁸ since, an early approach, right after the occurrence of the injury, greatly reduces the damage of the injury, the risk of death and the other problems resulting from injury.⁹

The presence of an injury gives the patient a higher probability of contracting local infection. Therefore, sometimes it is necessary to debride the focus, using saline or soap and water for cleaning and after removing devitalized tissues and foreign bodies, use hydrogen peroxide.¹ Studies indicate that mortality can be reduced by providing appropriate wound care and referral to a specialized center and immunization.¹⁰

In certain cases, it may be necessary to administer anti-tetanus serum (ATS). ATS is used for the prevention and treatment of tetanus, its indication varies according to the type and conditions of the lesion, information regarding tetanus vaccination and the previous use of the ATS itself. In cases that the serum cannot be used, human tetanus immunoglobulin should be used, when possible.²

If the victim has an incomplete immunization schedule, tetanus vaccination is indicated. This vaccine is indicated for active immunization of children from 2 months of age, in a 3-dose regimen (interval of 60 days between doses), indicating a 12 to 15 month booster with the DTP vaccine, a second booster is indicated at 4 years. Soon after, a reinforcement will occur every 10 years.¹¹

Another initial treatment step is to sedate the patient. The use of Diazepam and neuromuscular blockers is suggested as a principal way to provide muscle relaxation and control of spasms in patients with severe tetanus undergoing mechanical ventilation refractory to the use of other muscle relaxants.¹²

The use of these medications leads to the patient immobility in bed, increasing the risk of developing a Pressure Injury (PI).¹³ The care needed to prevent these complications is part of the nursing routine, such as changing the position every two hours and maintaining the organization of the bed, avoiding skin maceration, as well as the use of barrier creams and skin hydration.

Another possible complication associated with bed restriction is the risk of constipation, which can be increased by the lack of adequate nutrition and the use of pharmacological agents that favor the reduction of intestinal functioning.¹⁴

Muscular hypertonia and paroxysmal contractures lead the patient to have dysphagia, contracture of the masseter muscles (trismus and sardonic laughter), the neck (neck stiffness), and the dorsal region (opisthotonos),¹ which makes it difficult for the patient to eat. This impediment can result in

nutritional imbalance, requiring the nurse intervention with the multidisciplinary team.

Progressive muscle stiffness also affects the rectus abdominis muscles and the diaphragm, consequently leading to respiratory failure. The prevention of this complication and the maintenance of effective ventilation are better performed in an ICU environment through mechanical ventilation.¹²⁻¹³

In this sense, it is important that the nursing staff perform, when necessary, tracheobronchial aspiration, aiming to maintain the airways free of pulmonary secretions, always using all precautions to avoid reflex spasms and accidents, as well as respiratory infections.¹²

The overexcitability of the central nervous system leads the patient to present crises of muscle contracture when exposed to light, sound stimuli, temperature changes, and own body manipulation.¹ In this regard, the literature shows the effectiveness offered by the permanence of patients with tetanus in dark and silent rooms to reduce the chances of precipitating spasms.¹⁵ Therefore, the need to pay attention to the hospitalization environment is evident.

It is important to highlight that, despite all the scientific input, advances in nursing care are still essential. The systematization of nursing care (SAE) is a care model that provides greater autonomy and organization for the nursing service, in addition to enabling individualized and humanized care, as well as better quality.⁴

This resource also gives the nursing professional the possibility of preventing complications, avoiding the worsening of the patient's clinical condition and, consequently, reducing their hospital stay.⁴

Through the use of the BHN theory, it was noted that the individual affected by AT has as main compromises the psychobiological and psychosocial

needs, related to safety, physiological aspects, and esteem. With the identification of the affected BHN, it was possible to outline nursing care, ensuring quality care for patients with AT.

The relevance of each aforementioned care is clearly evidenced in the literature, as well as in health manuals and guidelines. However, their execution by the nursing staff are still unsatisfactory as care in its entirety was not observed in this service experience. The need to conduct studies in the area in order to contribute to the scientific scenario focused on this theme is highlighted.

CONCLUSION

It is well known that the provision of qualified care in the admission of patients with suspected AT as well as their proper referral to the ICU contribute to a better prognosis.

The "Safety / Protection" domain was the most affected, since AT causes the occurrence of uncontrolled muscle contractures, in addition to impairing mobility, thus increasing the risk of falls and the occurrence of injuries.

In this way, SAE and BHN theory allow the provision of organized care that reduces the occurrence of complications in the patient. In addition to being effective in promoting comprehensive and organized care, they make the prevention of complications possible and contribute to the appropriate treatment of symptoms.

It was observed through this experience that the main obstacles to carry out the NP consisted in the difficulty in performing the SAE in view of the various demands of the nursing staff, especially in more severe cases, which require greater availability from the team.

In Brazil, the need to intensify actions aimed at preventing and treating this pathology is emphasized.

RESUMO

Introdução: O tétano acidental é uma doença infecciosa de repercussões sistêmicas e com alta letalidade. Devido à complexidade que cerca a assistência a esses pacientes, o cuidado de enfermagem deve ser conduzido de forma sistemática, científica e individualizada. **Objetivo:** Relatar a experiência da sistematização da assistência de enfermagem a um paciente acometido por tétano acidental à luz da teoria das Necessidades Humanas Básicas. **Delineamento:** Trata-se de estudo de caráter descritivo, do tipo relato de experiência, desenvolvido no mês de março de 2019 após a assistência de enfermagem a um paciente diagnosticado com tétano acidental, internado em uma unidade de terapia intensiva (UTI) de um hospital público. **Resultados:** A elaboração do plano de cuidados incluiu informações acerca do diagnóstico risco e diagnóstico real, intervenções de enfermagem e resultados esperados, associados com a necessidade humana básica afetada. **Implicações:** É notório que a prestação do cuidado qualificado na admissão do paciente com suspeita de tétano acidental, bem como seu devido encaminhamento para a UTI contribuem para um melhor prognóstico.

DESCRITORES

Tétano; Unidades de Terapia Intensiva; Cuidados de Enfermagem.

RESUMEN

Introducción: El tétanos accidental es una enfermedad infecciosa con repercusiones sistémicas y alta letalidad. Debido a la complejidad que rodea la asistencia a estos pacientes, la atención de enfermería debe realizarse de manera sistemática, científica e individualizada. **Objetivo:** informar la experiencia de sistematizar la atención de enfermería a un paciente afectado por tétanos accidental a la luz de la teoría de las necesidades humanas básicas. **Delineación:** Este es un estudio descriptivo, un tipo de informe de experiencia, desarrollado en marzo de 2019 después de la atención de enfermería para un paciente diagnosticado con tétanos accidental, ingresado en una unidad de cuidados intensivos (UCI) de un hospital público. **Resultados:** La elaboración del plan de atención incluyó información sobre el diagnóstico de riesgo y el diagnóstico real, las intervenciones de enfermería y los resultados esperados, asociados con la necesidad humana básica afectada. **Implicaciones:** Es notorio que la prestación de atención calificada en la admisión de pacientes con sospecha de tétanos accidental, así como su derivación adecuada a la UCI contribuyen a un mejor pronóstico.

DESCRIPTORES

Tétanos; Unidades de Cuidados Intensivos; Atención de Enfermería.

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CONFLICTS OF INTEREST

There are no conflicts of interest to declare.