

Original article

Experience report: construction of a convulsive crisis protocol

Relato de experiência: construção de um protocolo de atendimento à crise convulsiva

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Received: 20 March 2020; Accepted: 18 June 2020; Published: March 2021.

Abstract

Objective: highlighting the importance of the construction and implementation of a protocol for the management of seizures in the 24-hour emergency care unit of Benedito Bentes, Maceió / AL, which aims to ensure the provision of quality services, objectively, quickly and resolutely to patients. in situations of seizure. **Methods:** this study is an experience report elaborated by describing the phases of the assistance strategy elaboration process by a protocol. **Discussion:** thus, the presented seizure protocol proposes to describe the management steps for seizure control that meet the unit's norms according to the Ministry of Health and was organized schematically according to the moment or episode. Signs of clinical risk from risk classification to medical discharge have been identified. **Conclusion:** elaborating a protocol for a unit while nurses in an extracurricular stage, allowed the deepening of scientific technical knowledge, arousing a greater interest in research to enable quality care, seeing the patient holistically in all socioeconomic aspects.

Keywords: seizures; protocol; outpatient care

Resumo

Objetivo: apresentar o desenvolvimento de um protocolo de atendimento aos pacientes vítimas de crise convulsiva. **Métodos:** trata-se de um relato de experiência que descreve as fases do processo de elaboração da estratégia de assistência por um protocolo. **Discussão:** o protocolo propõe descrever as etapas de manejo para controle das crises que atendam as normatizações da unidade e do Ministério da Saúde, tendo sido organizado de forma esquemática de acordo com o momento ou episódio, sendo identificados os sinais de risco clínico desde a classificação de risco até alta médica. **Conclusão:** a elaboração do protocolo de crise convulsiva possibilitou o aprofundamento nos conhecimentos técnicos, científicos e organizacionais do serviço com uma padronização de condutas, possibilitando uma assistência de qualidade.

Palavras-chave: convulsões; protocolo; assistência ambulatorial

Introduction

Convulsive crisis can be characterized as a warning sign that raises conducts based on the treatment and diagnoses of implicit neurological diseases, with inquiries that compare the neurological prognosis and the use of anticonvulsant medications¹.

This access is due to some physiological and pathological processes that may influence the origin of epilepsy, such as fever, metabolic factors, sensory activation, emotional factors, circadian rhythms, and hormonal factors².

The signs and symptoms present in a convulsive crisis characterize the type of convulsion, which may be generalized or partial. Generalized convulsive crisis is characterized when there is movement of the arms and legs, stiffness, deviation of the eyes to one side, uncontrollable sphincters, and loss of consciousness. The face may become grayish because the individual cannot breathe during the crisis. According to the characteristics of the crisis, it may belong to crises of great ill or small ill¹.

Convulsive crisis can present in various ways; however, in general, there is the presence of sialorrhea, clenched teeth, tongue bite, cyanosis (at the beginning of the crisis), pallor, relaxation of sphincters, loss of reflexes and consciousness, and there may be apnea³.

During the generalized crisis of great ill, the patient goes through the tonic phase and clonic phase (tonic-clonic movements) several times, and there is loss of consciousness. In the tonic phase, the movements are violent, rhythmic, and involuntary; there may be a characteristic sound through the mouth (scream) and lasts a short time. In addition, the skin can become cyanotic if the person does not breathe during the crisis (apnea). It is normal for the patient to get tired and drowsy at the end of the crisis¹.

In simple partial crisis, the convulsions are limited to one area of the body, but can extend to other areas, without loss of knowledge; persons see or hear things or sounds that do not exist. In the complex partial crisis, the movements of the mouth are continuous, as if the person were chewing. Body movements have no coordination when picking up objects, moving clothes, undressing, and walking. In myoclonic crisis, there are sudden and strong muscle contractions in all or part of the body⁴.

In little ill, there is a brief loss of consciousness that can go unnoticed. In simple or akinetic focal crisis, there is no loss of consciousness and there is temporary change in movement, sensitivity, and function in one of the limbs. If there is loss of consciousness, it is called complex focal crisis⁴.

In the atonic crisis, when the body becomes soft, as if it were made of rubber, the person suffers a fall if standing. The crisis of absence is characterized by a reduction in the level of consciousness: the person is usually in the position in which he was before the crisis, but with a look as if he were absent⁴.

Neurological emergencies are common within urgency and emergency centers, especially convulsive crisis, which correspond to 1% to 2% of emergency care, 25% of which are the first. In this sense, the first care, when performed adequately, can avoid sequelae, and decrease mortality; however, this condition is a challenge for emergency units, where many professionals are not prepared to care for patients with said disorder⁵.

In view of the above, evidenced by the need to establish routines based on scientific evidence, there is a need for a guide, effective and resolute instrument for the management of these situations. The protocols arise with the purpose of improving and organizing health services and systematizing the provision of care and may result from guidelines from the SUS or arise from the demand for purposes when trying to solve concrete problems of their daily lives⁶.

In a more synthetic form, protocols are the routines of care and management actions of a given service, team, or department, elaborated from current scientific knowledge, supported by scientific evidence, by experienced professionals and specialists in an area and that serve to guide movements, conducts and clinical procedures of health service workers. Clinical protocols are instruments that direct the health care of users, presenting characteristics focused on the clinic, and for preventive, promotional and educational actions⁷.

Therefore, the aim of the study is to present a proposal for a protocol for the care of convulsive crisis. This report seeks to demonstrate the importance of construction, as well as the implementation of a protocol for the management of convulsive crisis in a UPA in the municipality of Maceió, State of Alagoas, which will evidence the provision of quality health services, in an objective, quick and problem-related manner to patients in situations of convulsive crisis, derived from epileptic disease or other origins.

Materials and Methods

This study is a descriptive and exploratory experience report, which presents the process of collective construction through the description of the phases of a protocol for the care of convulsive crisis.

The experience report is a descriptive-exploratory research tool that presents a reflection on an action or actions and their relevance being in the relevance and importance of the problems that are exposed and presented in it, as well as the level of generalization in the application of procedures and/or intervention results in other similar situations, that is, it serves as a collaboration to the methodological praxis of the area to which it belongs.

The municipality of Maceió, Capital State of Alagoas, covers an area of 509.5 km² and a population of 932,078 (8). Currently, Maceió has as reference 4 Level III Upas that operate 24 hours, located in the neighborhood Benedito Bentes, Trapiche da Barra, Cruz das Almas and Tabuleiro dos Martins.

The research place was an Emergency Care Unit located about Benedito Bentes in the city of Maceió-AL, with capacity to serve more than 450 patients per day, and has a management team, with administrator, multidisciplinary team with physicians, nurses, nursing technicians, pharmacists, social workers, dentists, as well as support teams, hygiene, concierge, reception, clinical engineering, orthopedic immobilization, radiology, and laboratory.

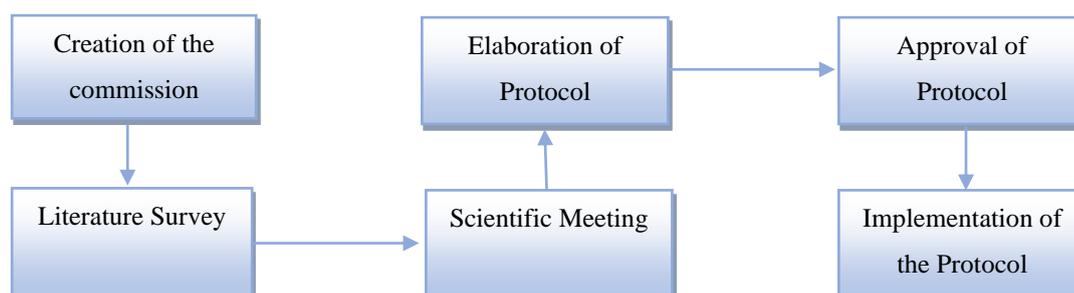
For the elaboration of the Protocol for The Care of Convulsive Crisis, a committee was created with a multidisciplinary team composed of two Nurses (female), two Nurses (male), one Doctor, one Manager of the administration of the unit, thus totaling 6 participants.

The construction of the protocol was based on the analysis of articles, researched in the databases available online with the relevant contents relevant to the theme, and using the descriptors Convulsions, Protocol and Outpatient Care.

After the literature survey, serial scientific meetings began to discuss and systematize all the scientific production previously raised. Finally, the protocol for care and a management flowchart to conduct the care that will be provided to the patient effectively, where it will be implanted in the UPAS with the necessary resources for local support.

The construction process took place from September to December 2019. Subsequently, the protocol went to the Quality Management and Technical Direction sector to give the respective consensuses; and, finally, the protocol was directed to the approval of the General Directorate of the unit.

Figure 1. Flowchart of construction of the protocol for the care of *convulsive* crisis.



Results

Due to the high demand for cases of convulsive crisis and lack of standardization for the management of these cases, it was proposed the creation of a crisis control protocol derived from epileptic disease or other origins. The protocol presented describes the management steps for crisis control that meet the unit's norms.

Thus, it was organized in a schematic way according to the moment or episode, and the signs of clinical risk were identified from risk classification to medical discharge. Thus, this service can be didactically divided into 2 stages.

Risk Rating Host

The patient will be classified by the nurse according to the presentation of the convulsive crisis: if it is ongoing or already occurred, according to the flowchart of convulsive crisis by the Manchester Protocol, following the recommendations described in table 1.

Table 1. Classification of risk according to the discriminators.

RISK RATING	DISCRIMINATORS
RED	Under convulsion Hypoglycemia 55 mg\dl Shock Inadequate breathing
ORANGE	Altered level of consciousness Signs of meningism History of overdose or poisoning Newborn and baby warm ($\geq 38,5$ °C) Child and adults much warm (≥ 41 °C) Sepsis possible
YELLOW	History of head trauma Febrile newborn (37,5 °C -38,4 °C) Warm children and adults (38,5 °C – 40,9 °C)
GREEN	Headache Febrile babies, children, and adults (37,5 °C – 38,4 °C) Recent event

Source: Brazilian Risk Classification Group, 2016⁹.

In addition to the identification of symptoms, it is necessary to assess the patient's vital signs, blood pressure (BP), heart rate (HR), respiratory rate (RR), hemoglycotest (HGT), oxygen saturation, assess level of consciousness, signs of cranial or spinal trauma, pupillary reactivity, signs of meningism or infection, and pain level.

Clinical Care and Management

During the risk classification, the severity levels will be identified and consequently the management for each of them will be traced. The patient who presented a crisis less than 24 hours ago should be referred to the yellow observation room immediately, where he will be welcomed and observed by a multidisciplinary team, given the risk of further crises. If the crisis occurred more than 24 hours ago, refer to medical attention within 60 minutes.

Patients who are under crisis should be referred to the red room immediately, with staff and equipment available

to start a care quickly. The team will perform evaluation and management simultaneously, applying the MOVE protocol, already established in the unit, doing the monitoring of the patient. Oxygen should be offered if oxygen saturation is less than 94%, establish venous access, and perform clinical and complementary examination, if necessary. In addition, to perform immediate communication with the on-call physician, and begin specific stabilization maneuvers, with lateralization of the patient and use of cushions to avoid possible trauma during the convulsion. The drug intervention, their respective dosages and the time should follow the recommendations in Table 2.

Table 2. Recommendations of medications, pathways, and dosages according to the time of convulsive crisis.

	MEDICATION	ROUTE OF ADMINISTRATION	DOSAGE	TIME OF CRISIS
ADULT	DIAZEPAM	Intravenous	0,1 a 0,5 mg/kg	0 a 5 min
	MIDAZOLAM	Intravenous/ intramuscular	2ml (5mg/ml)	More than 5 min
	PHENYTOIN	Intravenous	20mg/kg em SF 0,9%	Up to 10 min
	PHENOBARBITAL	Intravenous bolus	20mg/kg	Persist for more than 30 min
CHILD	DIAZEPAM MIDAZOLAM	Intravenous/rectal	1mg/idade ano	
PREGNANT	MAGNESIUM SULFATE	Intramuscular	10g (5g em cada glúteo)	

Source: research authors, 2019.

Care by all professionals should occur following the protocol in the unit for better patient care, aiming not only control, but also care after the convulsive crisis, which are: observing if the person has suffered injuries, if there is difficulty breathing, loosen tight clothes around the neck and waist.

All patients should remain under observation in bed with elevated grids from 4 to 6 hours; in case it is the first and stable crisis, from 6 to 12 hours, when the patient shows warning signs, offer nothing to eat or drink, until he is fully awake and conscious.

Convulsing or unconscious patient

Measurement: Blood pressure, temperature, heart rate, respiratory rate, capillary glycemia, oxygen saturation.

Investigate: Signs of head and spine trauma, dilated or punctiform pupils, signs of meningitis or systemic infection, focal deficit.

Ask about: (If unconscious, ask the companion) "had recent seizure?"

Duration of consciousness/seizure change.

Number of seizures.

History of skull or neck trauma.

Other medical problems, medication, intoxication or use of other substances, alcohol withdrawal, diabetes.

History of epilepsy.

YES

In all cases.

YES

If you're under convulsion.

Pregnancy diagnosis.

If you are in the 2nd half of pregnancy or by the 1st week postpartum and no history of epilepsy:

Suspected eclampsia

YES

If head or **neck trauma or neuroinfection is suspected.**

Check airways, breathing and circulation. Protect the patient from injury.
Do not leave the patient alone, ask for help.
Lateralize the patient to prevent aspiration.
Do not put anything in the mouth.

Administer intravenous saline solution (I.V.) at 30 drops/minute.
Administer glucose I.V. (50 ml of glucose 50% in adult; 2-5 ml/kg of glucose 10% in children), a caveat in alcoholic or malnourished patients.
Administer diazepam I.V. 10 mg slowly (child; 1 mg/age year).
Administer rectal diazepam (at the same dose above) if you do not get venous line.

DO NOT administer diazepam intramuscularly.

DO NOT administer more than two doses of diazepam.

Administer magnesium sulfate 10 g I.M.; apply 5 g (10 ml of 50% solution) with 1 ml of 2% lidocaine in the same syringe. I.M. deep in the outer upper quadrant on each buttock.

If diastolic blood pressure is above 110 mmHg: apply hydralazine 5 mg I.V. slowly (3-4 minutes). If this is not possible, apply I.M. If the diastolic pressure remains above 90 mmHg, repeat the dose every 30 minutes until the diastolic pressure reaches 90 mmHg. **Do not apply more than 20 mg of hydralazine intotal.**

Handle the convulsive patient using the protocol indicated above. Head or neck trauma: Do not move the neck.

Neuroinfection: management of infection according to the institution's guidelines

Discussion

The search for quality care, and the need to offer care with minimization of risks for patients have been increasing, and a great challenge for health institutions. In this sense, large societies and institutions have been addressing the subject, launching, and adjusting the conducts in these situations and seeking tools for improvement.

Risk classification is a clinical management tool used in emergency services to construct patient hospitalization flows, ensuring medical attention according to response time and patient need. The method outlined by the Manchester Risk Classification System allows the quick definition of a clinical priority⁹.

The classification process occurs involving the choice of a flowchart consistent with the main complaint or sign and symptom that motivates the patient to seek the service. Each flowchart has its discriminators, which will differentiate patients from each other so that they can be allocated to one of the five clinical priorities. The Manchester Risk Classification System has a list, compiled after consensus, covering all situations presented in the emergency services, and the convulsion being a situation of great importance and impact, a specific flowchart has been separated for follow-up⁹.

This methodology happens purposely in this format because the emergency services respond, in most cases, according to the signs and symptoms that the patient presents. Its effectiveness can be verified in the study conducted in a medium-sized private hospital located in northern São Paulo, which performs approximately 12,000 visits/month, showing that the risk classification protocol was able to predict the destination and clinical outcome (hospitalization, discharge, death), association between high priority classifications and the highest number of hospitalizations among these patients, when compared with the less urgent ones¹⁰.

Regarding the validity and reliability of the Manchester Screening Protocol in an integrative literature review with 14 articles, it is revealed that this protocol has a reliability that varies between moderate to almost perfect, in addition to protecting patients, ensuring a higher level of priority and being a good predictor of the need for hospitalization and mortality¹¹.

The drug intervention for the conduct of convulsive crisis is the temporal point and, through the consensus of the task force of the International League against Epilepsy (ILAE), it was determined that the treatment of convulsive crisis should be started at approximately five minutes. This time point is also used as a parameter to start therapy with anticonvulsant drugs in several protocols. It is recommended to "start the timer" when a convulsion lasts more than five minutes¹².

Regarding the choice of anticonvulsant treatment, in the study with 11 national or regional guidelines published in English, studied, it was evidenced that eight recommend the use of diazepam in the first temporal phase of the crisis (up to 5 minutes), also making it clear that treatment with more than two doses of benzodiazepines was associated with respiratory depression. The indication of diazepam as the first choice for convulsive crisis is also registered by the Ministry of Health in the Protocol of Management and Conduct of the State of Epileptic Disease. Both documents indicate that the dose of diazepam should be administered intravenously^{13, 14}.

The same study recommends the use of midazolam as a second choice to diazepam. This should be considered whenever there is no possibility of venous access during the crisis and in cases of recurrence. Phenytoin and phenobarbital anticonvulsants were standardized in more than 80% of the guidelines analyzed, thus corroborating their efficacy for crisis containment¹³.

Conclusion

The elaboration of the protocol on the scientific basis consulted in the literature allowed the development of actions and interventions created in a schematized way to assist people under convulsive crisis who arrive at an emergency care unit. During the elaboration process, it was perceived the importance of agreeing on conducts that would direct professionals to certain interventions, to create an instrument that can be effectively used for professional conduct to be done effectively, which directly results in patient care and better prognosis.

Therefore, the elaboration of a protocol on convulsive crisis allowed the deepening of technical-scientific knowledge, as well as the organization of the service with a standardization of conducts that enables quality care, seeing the patient holistically, with care from the moment of the crisis to their care after the occurred.

Conflict of interest: The authors stated that there was no conflict of interest.

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