

## **Trauma kinematics: assessment of the victim in labor in pre-hospital care**

**Cinemática do trauma: avaliação da vítima em trabalho de parto no atendimento pré-hospitalar**

**Cinemática del trauma: valoración de la víctima en trabajo de parto en la atención prehospitalaria**

Received: 07/07/2021 | Reviewed: 07/15/2021 | Accept: 08/05/2021 | Published: 08/09/2021

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**Abstract**

Pre-hospital care emerged with the aim of reducing the number of deaths, the length of stay in hospitals and the sequelae resulting from therapeutic delay, in trauma and acute illnesses, as well as in situations involving high-risk pregnant women and newborns. This study aimed to analyze the obstetric occurrences attended by the SAMU in pre-hospital care, aiming to contribute to the improvement of care at the level of primary health care for pregnant women, as well as to plan actions to raise awareness of the population regarding the purpose of the service. mobile pre-hospital care. The data survey was carried out between January and July 2021, by searching for articles indexed in the Virtual Health Library (BVS) and Scientific Electronic Library Online (SciELO), with the help of the following databases: PubMed (National Center for Biotechnology Information), Lilacs (Latin American and Caribbean Health Sciences), Nursing Database (BDENF). The need for urgent care at any time during the gestational period requires speed, in addition to quick clinical and critical thinking that corresponds to the patient's real need. This is because the emergency care, the adequate evaluation of the condition and the support alternatives available in the emergency service are essential for the proper outcome of the complication. It is necessary to implement mechanisms to impose specific strategies, since better management in pre-hospital care for the mother/child binomial can prevent severe injuries that culminate in maternal death and equally reduce the chance of complications and neonatal deaths.

**Keywords:** Emergency treatment; Premature Rupture of Fetal Membranes; Pre-Hospital Care.

**Resumo**

O atendimento pré-hospitalar surgiu visando reduzir o número de óbitos, o tempo de internação em hospitais e as sequelas decorrentes do retardo terapêutico, em traumas e doenças agudas, bem como em situações que abrangem gestantes e recém-nascidos de alto risco. Este estudo teve como objetivo Analisar as ocorrências obstétricas atendidas pelo SAMU no atendimento pré – hospitalar, visando contribuir para melhoria do atendimento no nível da atenção primária à saúde da gestante, bem como para o planejamento de ações de conscientização da população quanto à finalidade do atendimento pré-hospitalar móvel. O levantamento dos dados foi realizado entre os meses de janeiro a julho de 2021, mediante a busca de artigos indexados na Biblioteca Virtual em Saúde (BVS), e Scientific Electronic Library Online (SciELO), com o auxílio das seguintes bases de dados: PubMed (National Center for Biotechnology Information), Lilacs (Literatura Latino-Americana e do Caribe em Ciências da Saúde), Base de Dados de Enfermagem (BDENF). A necessidade de atendimento de urgência em qualquer momento do período gestacional exige rapidez, além de pensamento clínico e crítico rápidos que correspondam à necessidade real da paciente. Isso porque o pronto atendimento, a adequada avaliação do quadro e as alternativas de suporte disponíveis no serviço de emergência são essenciais para o desfecho adequado da intercorrência. Torna-se necessário a implementação de mecanismos para imposição de estratégias específicas, já que o melhor manejo no atendimento pré-hospitalar ao binômio mãe/filho pode prevenir agravos severos que culminem na morte materna e igualmente na redução de chance de intercorrências e óbitos neonatais.

**Palavras-chave:** Tratamento de emergência; Ruptura Prematura de Membranas Fetais; Atendimento Pré-Hospitalar.

**Resumen**

La atención prehospitalaria surgió con el objetivo de reducir el número de defunciones, la estancia hospitalaria y las secuelas derivadas del retraso terapéutico, en traumatismos y enfermedades agudas, así como en situaciones de gestación y recién nacidos de alto riesgo. Este estudio tuvo como objetivo analizar las ocurrencias obstétricas atendidas por el SAMU en la atención prehospitalaria, con el objetivo de contribuir a la mejora de la atención a nivel de atención primaria de salud a la gestante, así como planificar acciones de sensibilización de la población sobre la finalidad del servicio

atención prehospitalaria móvil. La encuesta de datos se realizó entre enero y julio de 2021, mediante la búsqueda de artículos indexados en la Biblioteca Virtual en Salud (BVS) y la Biblioteca Electrónica Científica en Línea (SciELO), con la ayuda de las siguientes bases de datos: PubMed (Centro Nacional de Información Biotecnológica), Lilas (Ciencias de la Salud de América Latina y el Caribe), Base de datos de enfermería (BDENF). La necesidad de atención urgente en cualquier momento del período gestacional requiere rapidez, además de un pensamiento clínico y crítico rápido que corresponda a la necesidad real de la paciente. Esto se debe a que la atención de emergencia, la evaluación adecuada de la afección y las alternativas de apoyo disponibles en el servicio de emergencia son esenciales para el correcto desenlace de la complicación. Es necesario implementar mecanismos para imponer estrategias específicas, ya que una mejor gestión en la atención prehospitalaria del binomio madre / hijo puede prevenir lesiones graves que culminen en muerte materna e igualmente reducir la posibilidad de complicaciones y muertes neonatales.

**Palabras clave:** Tratamiento de emergencia; Rotura prematura de membranas fetales; Atención prehospitalaria.

## 1. Introduction

Pregnancy is a physiological phenomenon and, therefore, its evolution occurs, in most cases, without complications. Clinical observations and statistics prove that about 90% of pregnancies do not present complications throughout their evolution, being considered as low-risk pregnancies. Others, however, already start with problems or these arise during their course, and are more likely to have unfavorable outcomes for the fetus and the mother (Santana; Almeida; Prado, 2010).

This portion constitutes the group called high-risk pregnancies, in which the life or health of the mother and/or fetus and/or newborn are more likely to be affected than the average of the population considered (Brazil, 2012).

Obstetric urgencies and emergencies are situations whose resolution requires an almost immediate response by the entire health team (Rezende, 2014). Mobile pre-hospital care emerged with the aim of reducing the number of deaths, the length of stay in hospitals and the sequelae resulting from therapeutic delay, in trauma and acute illnesses, as well as in situations involving high-risk pregnant women and newborns.

The mobile emergency care service (SAMU), established by the Ministry of Health of Brazil through ordinance No. 2048/GM of November 5, 2002 (Brazil, 2006a), represents an important instrument for reducing complications in emergency cases and emergency, especially those related to obstetric complications, through the provision of fast and efficient care.

There is little information about SAMU care for obstetric complications. Globally, hemorrhage, especially postpartum hemorrhage, is the leading cause of maternal death (25%), accompanied by infection (15%), and hypertensive diseases of pregnancy (12%), especially eclampsia (Dotto, 2006).

Pregnant women killed by car trauma are among the important morbidity and mortality statistics, whether through car accidents or firearms. These health problems need to be managed responsibly as they are reflected in maternal and perinatal mortality rates. Injuries, in all its divisions, stand out as a priority in the care provided by the health team. The most common traumas are: head trauma, abdominal trauma, chest, body extremities, spinal cord and facial trauma (Vamerlati, 2009).

The conduct in cases of traumatized pregnant women, as well as outside pregnancy, requires rapid access to injuries and the institution of therapeutic measures to support life in the shortest time possible, within a systematic treatment that is already established in the field of medicine emergency according to the authors surveyed (Costa; Ramos; Serrano, 2005).

Duarte et al. (2007) report that patients who are not properly attended to at the place and time of trauma can result in irreparable injuries.

It is known that with the technical and scientific knowledge of nurses, when using the immediate and adequate pre-hospital rescue technique at the place and time of trauma in a pregnant patient in a car accident, it reduces the risk of injuries and promotes a better quality of life, reducing the risk of more serious consequences such as traumatic spinal cord injury, fetal or pregnant woman's death (Montovani, 2011).

In view of this reality, the pre-hospital health professional must be able to act in traumatic obstetric occurrences. Considering the high risk for urgencies and emergencies inherent to the gestational period and the lack of data from the SAMU

that enable knowledge about the care in a systematic way. We hope that this study can contribute to reducing the rate of maternal and fetal mortality, improving information about the first care to pregnant women after a traumatic collision.

This study aimed to characterize the obstetric occurrences attended by the SAMU in pre-hospital care, aiming to contribute to improved care at the level of primary health care for pregnant women, as well as to plan actions to raise awareness of the population about the purpose of the care. mobile pre-hospital care.

## **2. Methodology**

This study is an integrative literature review of a qualitative nature. The integrative review consists of a research tool that allows the theoretical analysis of several authors on a given issue (Pereira et al., 2018).

The integrative literature review comprises one of the research methods that make it possible to link theoretical foundations to clinical practice, based on scientific knowledge, quality results and cost-effectiveness (Galvão et al., 2004; Souza et al., 2010).

The integrative literature review is an investigation method that allows the search, critical evaluation and synthesis of available evidence on an investigated topic, in which the final product is the state of knowledge of the investigated topic, the implementation of effective interventions in the provision moreover, it allows the identification of weaknesses, which may lead to the development of future investigations (Mendes et al., 2008).

Vieira and Zouain (2005) consider that qualitative research attributes fundamental relevance to the statements of the social actors involved, to the discourses and interpretations transmitted by them. Thus, these authors claim that this type of research values the detailed description of the phenomena and elements that involve the subject in question.

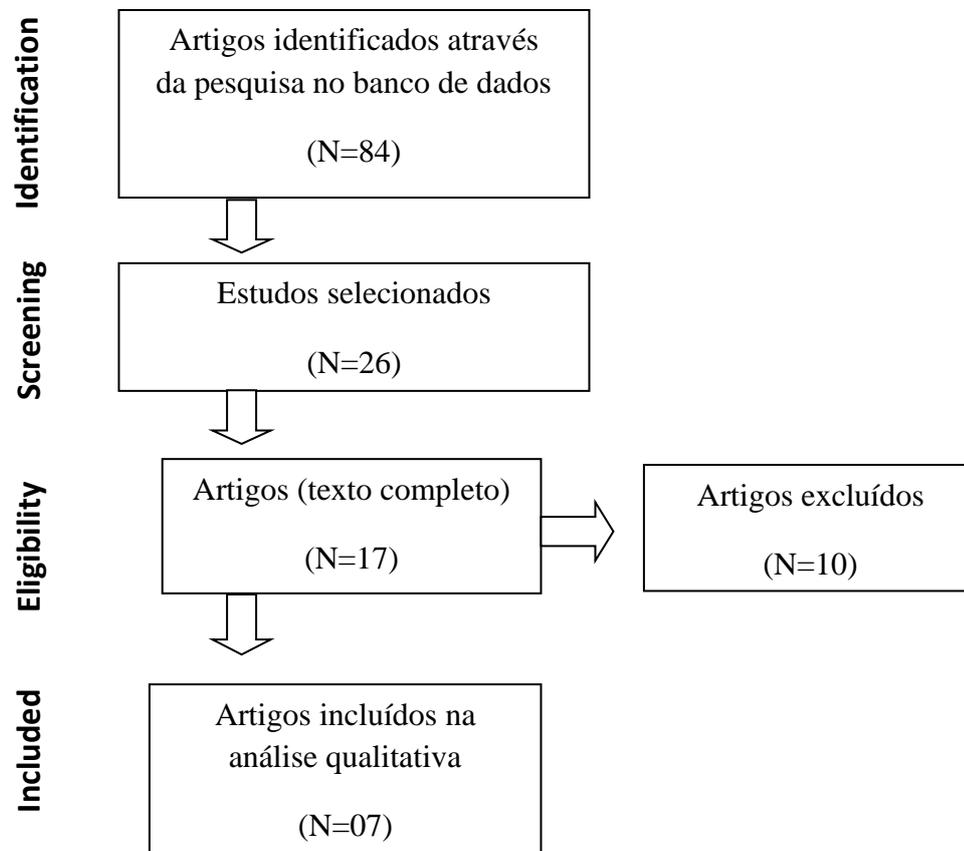
The data survey was carried out between the months of January to July 2021, by searching for articles indexed in the Virtual Health Library (BVS) and Scientific Electronic Library Online (SciELO), with the help of the following databases: PubMed (National Center for Biotechnology Information), Lilacs (Latin American and Caribbean Health Sciences), Nursing Database (BDENF). The following Health Sciences Descriptors were used: Obstetric Emergency; Emergency assistance; Emergency Medical Services; High-risk pregnancy; Emergency treatment. The Boolean operator AND was used among the descriptors mentioned.

The inclusion criteria for content selection were complete articles in Portuguese, English and Spanish. Published in full according to the theme referring to the integrative review, documents, regulations, regulations of health entities and scientific articles published in the aforementioned databases covering the years 2000 to 2021. The exclusion criteria were duplicate, incomplete articles, abstracts, reviews, debates, experience report, articles published in annals of events and unavailable in full.

## **3. Results and Discussion**

Based on the literature review and analysis of studies indexed in electronic databases, about the proposed theme, 34 scientific studies were found, and only 26 studies were selected, 17 met the previously established inclusion criteria, of which 10 were excluded by the exclusion criteria. Remaining 07 articles for composition and analysis of the study.

**Figure 1.** Flowchart of identification and selection of articles. 2021.



Source: Own elaboration (2021).

Knowledge of the characteristics of obstetric occurrences attended by an emergency service is essential, and the study of the profile of patients requires theoretical deepening of the subject by the multidisciplinary team of SAMU. In this way, the compilation of information about care for a given health problem becomes a scientific product capable of influencing professional behavior and the development of health care prevention strategies.

The need for urgent care at any time during the gestational period requires speed, in addition to rapid clinical and critical thinking that corresponds to the patient's real need. This is because the emergency care, the adequate assessment of the situation and the support alternatives available in the emergency service are essential for the proper outcome of the complication (Brazil, 2015).

The explanation for this increased risk is justified by the fact that during this period the bodies of these girls are still developing, and an early pregnancy can also harm the physical aspects of the immature organism, as well as normal growth that is still incomplete (Maciel, 2012).

In this sense, maternity in youth should be better examined more broadly, in the national context, to enable the development of interventions and public policies that address the heterogeneity of this group (Oliveira; Coimbra; Pereira, 2015).

According to the Ministry of Health (Brazil, 2006), there was a significant increase in the number of prenatal consultations per woman who gives birth through the SUS, from 1.2 consultations per birth in 1995 to 5.45 consultations per birth in 2005, which demonstrates an expansion in health coverage for this portion of the population.

It should be noted that the activation of the SAMU does not always occur due to a real urgency. Due to the precarious situation in which most pregnant women live, many of them activate the service only for the purpose of being transported to the hospital, causing an overcrowding of the service's lines and fleet, which results in a negative influence on the system (Dantas et al., 2013).

With regard to obstetric complications attended by the SAMU, labor was the one that generated the most assistance, as this obstetric urgency is directly related to the risk of maternal-fetal death and, for this reason, it needs to be treated quickly, with caution and effectiveness necessary for the maintenance of life (Silva et al., 2015).

Other complications found in this study were nausea and vomiting which, when not very intense, configure some of the normal bodily changes during the first trimester of pregnancy, often explained by the anxiety of pregnancy uncertainty (Silva et al., 2015).

According to Costa, Ramos and Serrano (2005), fetal loss in pregnant women victims of trauma can reach figures ranging from 4 to 61%, as its magnitude depends on the severity of the damage and the length of care provided to the pregnant woman.

The death of a pregnant or postpartum woman victim of trauma is not included in the calculation of the maternal mortality ratio. Such deaths are classified as "unrelated" death or "non-obstetric maternal death", unlike direct and indirect maternal obstetric deaths because, presumably, they are not triggered (direct) or aggravated (indirect) by the pregnancy-puerperal state. It is observed that in the hospital units analyzed by other authors, the deaths of pregnant women were mostly due to hemorrhagic shock. In the Brazilian population, few studies assess the impact of trauma on pregnant women (Tedesco, 2000).

#### **4. Final Considerations**

This study highlights the need to improve the number of visits that required basic life support, it highlights the need to assess the health system so that SAMU vehicles are not occupied in non-critical situations.

It is also necessary to implement mechanisms to impose specific strategies, since better management in pre-hospital care for the mother/child binomial can prevent severe injuries that culminate in maternal death and equally reduce the chance of complications and neonatal deaths.

We can highlight that it is extremely important that the multidisciplinary team, as well as the nurse working in the urgent and emergency area, performs their care for pregnant women based on pre-hospital care, respecting their particularities, offering a holistic care to the victim, based on comfort and safety, seeking to avoid aggravating the injuries/clinical complications of the mother and fetus, due to failures during care.

It can be concluded that the therapeutic conduct for pregnant women victim of trauma is similar to other clinics in mobile pre-hospital care, therefore, some changes are necessary and effective, as the physiology of a woman changes during pregnancy. The materials used to transport these women to the health unit are unchanged, however, the transport of the pregnant woman on the board must take place in the left lateral decubitus position, thus the maneuvers reduce the compression on the vena cava, increasing the venous return to the heart and improving cardiac output. In this study, it was possible to list the importance of the professional in pre-hospital care, mobile network, urgent and emergency care (SAMU), especially the nurse, showing their ability to deal with trauma in women with an obstetric profile.

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