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ORIGINAL ARTICLE

EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH ABDOMINAL FOCUS SEPSIS

PERFIL EPIDEMIOLÓGICO DOS PACIENTES COM SEPSE DE FOCO ABDOMINAL

PERFIL EPIDEMIOLÓGICO DE LOS PACIENTES CON SEPSIS DE FOCO ABDOMINAL

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ABSTRACT

Objective: to identify the epidemiological profile, the factors associated with death, and to guide nursing interventions in patients with sepsis of abdominal focus. ***Method:*** this is a quantitative, descriptive, cross-sectional study of 40 patients hospitalized in one in an Intensive Care Unit. The association with death was performed using Pearson's chi-square test and Fisher's exact test. Results were presented in the form of tables. ***Results:*** it was recorded that of the 40 (100%) patients, 57.5% were male, 67.5% had an initial diagnosis belonging to the gastrointestinal system. The variables that showed association with death in this ICU were: age greater than 60 years, which, although representing only 22.5% of the sample, accounted for approximately 90% of the deaths (p-value 0.005) and patients which were classified as septic shock, since 56.7% of the 75% died (p-value 0.04). ***Conclusion:*** it is understood that the risk factors associated with death in patients with sepsis of abdominal focus in the ICU are related to age greater than 60 years and with septic shock. ***Descriptors:*** Sepsis; Risk Factors; Mortality; Intensive Care Unit; Nursing; Profile Epidemiological.

RESUMO

Objetivo: identificar o perfil epidemiológico, os fatores associados ao óbito e nortear as intervenções de enfermagem frente aos pacientes com sepse de foco abdominal. ***Método:*** trata-se de um estudo quantitativo, descritivo, transversal, realizado com 40 pacientes internados em uma em uma Unidade de Terapia Intensiva. Realizou-se a associação com o óbito por meio dos testes de qui-quadrado de Pearson e exato de Fisher. Apresentaram-se os resultados em forma de tabelas. ***Resultados:*** registra-se que, dos 40 (100%) pacientes, 57,5% eram do sexo masculino, 67,5% tinham um diagnóstico inicial pertencente ao sistema gastrointestinal. Elencam-se as variáveis que apresentaram a associação com o óbito nesta UTI: idade maior a 60 anos, que, embora representasse apenas 22,5% da amostra, respondeu por, aproximadamente, 90% das mortes (p-valor 0,005) e pacientes que foram classificados com choque séptico, já que 56,7% dos 75% foram a óbito (p-valor 0,04). ***Conclusão:*** entende-se que os fatores de risco associados ao óbito nos pacientes com sepse de foco abdominal na UTI estão relacionados com idade maior a 60 anos e com choque séptico. ***Descritores:*** Sepse; Fatores de Risco; Mortalidade; Unidade de Terapia Intensiva; Enfermagem; Perfil Epidemiológico.

RESUMEN

Objetivo: identificar el perfil epidemiológico, los factores asociados al óbito y orientar las intervenciones de enfermería frente a los pacientes con sepsis de foco abdominal. ***Método:*** se trata de un estudio cuantitativo, descriptivo, transversal, realizado con 40 pacientes internados en una Unidad de Terapia Intensiva. Se realizó la asociación con el óbito por medio de las pruebas de chi-cuadrado de Pearson y exacto de Fisher. Se presentaron los resultados en forma de tablas. ***Resultados:*** se registra que, de los 40 (100%) pacientes, el 57,5% eran del sexo masculino, el 67,5% tenían un diagnóstico inicial perteneciente al sistema gastrointestinal. Se identifican las variables que presentaron la asociación con el óbito en esta UTI: edad mayor a 60 años, que, aunque representaba apenas el 22,5% de la muestra, respondió por aproximadamente el 90% de las muertes (p-valor 0,005) y pacientes que fueron clasificados con shock séptico, ya que el 56,7% del 75% fue la muerte (p-valor 0,04). ***Conclusión:*** se entiende que los factores de riesgo asociados al óbito en los pacientes con sepsis de foco abdominal en la UTI están relacionados con edad mayor a 60 años y con shock séptico. ***Descriptors:*** Sepsis; Factores de riesgo; Mortalidad; Intensive Care Unit; Enfermería; Perfil Epidemiológico.

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INTRODUCTION

It is known that, although widespread in the literature and in the practice of care, sepsis remains a devastating, expensive and challenging syndrome. This condition is currently considered a public health problem and one of the main causes of mortality in Intensive Care Units (ICUs).[1-2]

It is noted that although its incidence is showing a reduction in developed countries, such as Australia, sepsis still remains without significant decrease in developing countries like Brazil. It is pointed out that, in addition to social costs and lost lives, sepsis is responsible for an expressive financial burden.[2-3]

It is noteworthy that, over time, sepsis has undergone significant changes in its definition and is currently determined as a potentially fatal organic dysfunction caused by a dysregulated host response to an infection. Its worsening, called septic shock, occurs when there are circulatory, cellular and metabolic abnormalities, and may be clinically identified by the need to use vasopressor to maintain an average arterial pressure of 65 mmHg or greater, and a serum level of greater than 2 mmol / L (> 18 mg / dL), in the absence of hypovolemia.[4]

It is recognized that early identification of infectious outbreak and appropriate timely intervention, such as early liquid resuscitation, administration of antimicrobial therapy and vasopressor therapy, if appropriate, are factors that may define the outcome of the septic patient. It is argued, therefore, that nurses play a crucial role in this context, since it is the professional who is closest to the patient, performing the bedside care daily.[1-5]

It is verified that the task of providing care to the septic patient in the ICU requires the early recognition of the different clinical aspects, not only by the diagnosis, but also so that the rapid definitions of the therapeutic plans of Nursing can be drawn and appropriate monitoring strategies, thus improving the outcome of patients.[5]

It is observed that the highest incidence of sepsis in intensive care patients is of pulmonary origin, however, abdominal infections have a worse prognosis.[6-7]Abdominal sepsis is associated with significant morbidity and mortality rates, and the condition is the second most common cause of sepsis-related mortality in ICU, occurring as a result of intra-abdominal or retroperitoneal infection.[8]

It was identified, in a retrospective cohort performed at the studied ICU, that septic patients with a focus of abdominal infection presented the highest risk of death (HR: 3.71, 95% CI: 1.31-10.49), since 100% died at the end of 24 days of hospitalization.

OBJECTIVE

- To identify the epidemiological profile, the factors associated with death and to guide nursing interventions in relation to patients with sepsis of abdominal focus.

METHOD

This is a quantitative, descriptive, cross-sectional study performed with all 40 patients diagnosed with sepsis of abdominal focus in an ICU between March 2016 and February 2018. It is recorded that this ICU has 18 beds and is a reference unit for the State of Acre, Brazil.

The following inclusion criteria are listed: patients diagnosed with sepsis or septic shock of abdominal focus, according to the current sepsis criteria - *International Sepsis Definitions Conference*.[4]

The data was collected from an instrument created and validated. The patients were followed from the diagnosis of sepsis and / or septic shock of abdominal focus in the ICU until its outcome (discharge or death).

The following are the independent variables: age; sex; at the time of admission to the ICU; date of admission to the hospital; date of admission to the ICU; main diagnosis; sepsis classification; severity scores (APACHE II and SOFA); as well as the results of laboratory tests: blood count; albumin; urea; creatinine and lactate. It was also verified if volumes of crystalloids, colloids and blood products were infused, vasoactive drugs (noradrenaline / dopamine) and vital signs (heart rate, respiratory rate, axillary temperature, non-invasive blood pressure and oxygen saturation).

Acute physiology scores and chronic health evaluation II (APACHE II) were performed in all patients who had laboratory tests that included the variables necessary to perform the same in the first 24 hours of admission. The sequential organ failure score (SOFA) was obtained, which evaluates the respiratory, hematological, hepatic, cardiovascular and neurological functions, from the inclusion of the patient in the research. It should be noted that the neurological parameter is the most complex to evaluate due to the use of sedatives: in this study, the score of six to nine, equivalent to three, in the SOFA was attributed to all intubated patients.[10]

The clinical and laboratory data was collected through the medical records, and the exams were collected by a single laboratory.

It should be emphasized that the dependent variable was death in septic patients with abdominal focus.

Data was analyzed by the absolute and relative frequency of variables, as well as by their association with death, using the Pearson chi-

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square test and / or Fisher's exact test, using the SPSS program, version 20.0.

The formal requirements contained in national and international norms regulating research involving human beings were respected, and the study was approved on November 24, 2015, by the CAAE n. 47577215.2.0000.5009 of the State Hospital of Acre Foundation (FUNDHACRE).

RESULTS

They are described in table 1.

Table 1. Characteristics of patients with abdominal focus sepsis and factors associated with death in an ICU. Rio Branco (AC), Brazil, 2016-2018.

	N	%	Death N (%)	Discharge N (%)	P-value
Age					
≤ 60 years	31	77.5	11(35.5)	20 (64.5)	0.005
> 60 years	9	22.5	8 (88.9)	1 (11.1)	0.005
Sex					
Male	23	57.5	12 (52.2)	11 (47.8)	0.49
Female	17	42.5	7 (41.2)	10 (58.8)	
Initial diagnosis					
Gastro-intestinal	27	67.5	13 (48.1)	14 (51.9)	0.08
Trauma	4	10.0	1 (25.0)	3 (75.0)	0.08
Obstetric	4	10.0	0 (0.0)	4 (100.00)	0.08
Others	5	12.5	4 (80.0)	1 (20.0)	0.08
Classification of sepsis					
Sepsis	10	25	2 (20.0)	8 (80.0)	0.04
Septic shock	30	75	17 (56.7)	13 (43.3)	
Surgery					
Yes	37	92.5	18 (48.6)	19 (51.4)	0.60
No	3	7.5	1 (33.3)	2 (66.7))	
Surgical resurfacing (n=37)					
1	16	41.0	5 (31.3)	11 (68.8)	0.29
>1	21	53.8	12 (57.1)	9(42.9)	
Blood transfusion* (n=36)					
Yes	19	52.8	10 (52.6)	10 (58.8)	0.49
No	17	47.2	7 (41.2)	9 (47.4)	
APACHE* (n=26)					
≤ 20	2	7.7	0	2 (100.0)	0.11
> 20	24	92.3	14 (58.3)	10 (41.7)	
SOFA* (n=25)					
≤ 10	13	52.0	6 (46.2)	7 (53.8)	0.54
> 10	12	48.0	7 (58.3)	5 (41.7)	
Level of conscience					
Sedated	25	62.5	12 (48.0)	13 (52.0)	0.93
Conscious	15	37.5	7 (46.7)	8 (53.3)	
Arterial pH* (n=26)					
≤ 7.35	18	69.2	9 (50.0)	9 (50.0)	0.55
> 7.35	8	30.8	5 (62.2)	3 (37.5)	
Acute renal failure					
Yes	16	40.0	8 (50.0)	8 (50.0)	0.79
No	24	60.0	11 (45.8)	13 (54.2)	
Mechanical ventilation					
Yes	31	77.5	16 (51.6)	15 (48.4)	0.33
No	9	22.5	3 (33.3)	6 (66.7)	

**missings.*

The vital signs of patients with abdominal focus sepsis in the ICU should be highlighted that in table 2.

Table 2. Measures of central tendency of the vital signs of the patients with sepsis of abdominal focus in the ICU. Rio Branco (AC), Brazil, 2016-2018.

	Minimum	Average	Maximum	Standard deviation
Systolic blood pressure (mmHg)	60.0	114.0	168.0	25.68
Diastolic Blood Pressure (mmHg)	32.0	67.3	104.0	16.50
Average Blood Pressure (mmHg)	41.0	83.3	125.0	19.02
Respiratory frequency	12.0	19.2	33.0	5.36
Heart rate	57.0	104.7	157.0	26.04
Axillary temperature (ºC)	32.2	35.2	38.1	1.38

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It is related to the infectious process of the patients in table 3.

Table 3. Central tendency measure of the laboratory exams of patients with sepsis of abdominal focus in the ICU. Rio Branco (AC), Brazil, 2016-2018.

	Reference value	Minimum	Average	Maximum	Standard deviation
(AST)*	0-38 U/L	13.0	93.2	620.0	132.1
(ALT)**	0-42 U/L	9.0	61.4	425.0	83.48
Lactate	4.5-19.8 mg/dL	8	47.1	207	39.3
Hemoglobin	H: 13 a 18 g/dL M: 12 a 16 g/dL	4.2	9.9	14.0	2.1
Hematocrit	H:40 a 50 % M: 35 a 45%	13.0	29.7	44.0	6.5
Platelets	150 a 400.000 mm3	23.000.0	226.064.0	1.400.000.0	229.033
Leukocytes	5.000 a 10.000 mm3	2.100.0	13.285	39.000	8.325
Rods	0 a 5%	0	6.1	24	5.7
Segmented	54 a 64%	5.0	75.7	95.0	16.4

* Aspartate Transaminase (AST) **Transaminase (ALT)

DISCUSSION

It is established that abdominal focus sepsis is related to expressive mortality and morbidity rates, and the profile of the patients identified in this study is in line with other results, which also showed an association between old age and death. It is known that the elderly population generally presents high prevalence of chronic diseases and less organic reserve and evolves more easily to a critical state, resulting in a worse prognosis.[11-2]

The incidence of abdominal sepsis was found to be higher in males than in females.[13-4] It should be noted, however, that, although not significant, males had a higher mortality compared to females in this study.

An association with death was found in patients who progressed to septic shock, which corroborates with the results identified in a study in which the worsening sepsis was correlated with a higher mortality risk. It should be pointed out that, in patients with septic shock of abdominal focus, besides the aggressive antimicrobial treatment, which is primordial, the control of origin of the infection is also of paramount importance.[8,14]

It is stated that the main objectives of interventions, whether surgical or non-surgical, are to determine the cause of peritonitis, to drain collections of fluid and to control the origin of abdominal sepsis, thus avoiding the spread of multiple organ dysfunction syndrome by an ongoing peritoneal trigger.[8,14]

It should be emphasized that Nursing plays a fundamental role in the identification and rapid intervention of the septic patient, ensuring that patients receive evidence-based assistance through the collection of two hemoculture samples and the administration of antibiotic therapy. symptoms and / or signs, such as areas of redness and inflammation, which may help identify the possible origin of the infection in the abdomen region, perform and monitor fluid resuscitation, preferably with and monitor and supervise vasopressor therapy in those patients who did not respond to volume expansion to achieve mean arterial pressure $\geq\geq$65mmHg, in septic shock.[15-6]

It is noted, as far as the APACHE II score is concerned, that the score has a predictive result for the mortality of critically ill patients,[17-8] and that, although there was no association in the statistical analysis, 24 (60%) patients had an APACHE II score greater than 20 and 58.3% of them died.

Mechanical ventilation is considered a risk factor that contributes to the worsening of sepsis and the spread of multiple infections, consequently increasing the risk of death of these patients in the ICU11. It is pointed out that of the 40 patients, 77.5% (31) used ventilation, of which 51.6% died (p-value 0.33). It should be emphasized that nurses play an important role in promoting adequate oxygenation and ventilation, as well as in ventilatory weaning and in the prevention of ventilator-associated pneumonia, thus contributing to the reduction of deaths.[15]

It was possible to identify the measures of central tendency of the patients to identify that they had elevated heart rate and that, although the signs of inflammatory response are no longer part of the definition of sepsis, they still remain relevant for the diagnosis of infection . It is understood that manifestations such as tachycardia are generally associated with the reduction of vascular resistance, aiming to guarantee cardiac output, and may also present tachypnea as a clinical manifestation of respiratory failure; however, these signs are not frequent and sometimes the diagnosis is only given late, when organic dysfunction is already present. It is emphasized that, although the focus of sepsis is the abdomen, the response in the host is systemic.[3-4,8]

The nurse becomes the essential in this scenario, since he is directly involved in the care

of critical patients, assisting the patient integrally in all his basic human needs, performing the early identification of the clinical manifestations and suggesting, together with the multiprofessional team, the conducts pertinent to be taken with the objective of reducing the high morbimortality rates of sepsis.[3,15,19]

It is known that the septic patient has a variety of physiological changes, including reduction of hepatic clearance, however, elevation of transaminases is usually discrete in these patients, and when associated with jaundice, it is indicative of a worse prognosis. Elevated averages were compared to Aspartate Transaminase (AST) and Alanine Transaminase (ALT) in patients with abdominal focus sepsis, 93.2U / L and 61.4U / L, respectively.[3,16]

Sepsis management recommendations include the collection of blood samples for the measurement of lactate levels, tissue hypoperfusion marker. It is argued that such a measure has direct implications for Nursing care, since nurses are often responsible for collecting.[15-6]Hyperlactatemia is defined as a clear sign of severity in sepsis, used as one of the criteria for organic dysfunction. It is observed, therefore, that the patients of this research had a high lactate mean, which is highly associated to the increase in in-hospital mortality.[4,20]

It is understood that the limiting factor of this study was to have been performed in a single intensive care unit, with the presence of under-registration in the medical records of patients older than 14 years, according to the institution's own standards.

It is emphasized that the strengths of this research consist in the knowledge of the profile of the population studied in this unit and the factors associated with death, serving as an aid to guide the early identification and delivery of nursing care to these patients.

CONCLUSION

A higher incidence of male patients, aged over 60 years and with a gastrointestinal diagnosis.

It was concluded that the risk factors associated with death in patients with sepsis of abdominal focus in this ICU were related to patients older than 60 years and severity of sepsis. It is shown that the patients had on average a high heart rate, a low temperature and a significantly increased liver and lactate function.

It is argued that knowing the profile of this population and the factors associated with death produces subsidies to guide the early identification and delivery of nursing care to these patients. It is added that other research may contribute to the reduction of the mortality generated from this study.

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