Research Article
Artigo de Pesquisa
Artículo de Investigación

DOI: https://doi.org/10.12957/reuerj.2024.82810

Clinical profile of patients with suspected and confirmed sepsis admitted to an emergency unit

Perfil clínico dos pacientes suspeitos e confirmados de sepse admitidos em uma unidade de emergência

Perfil clínico de pacientes con sospecha y confirmación de sepsis ingresados en una unidad de urgencias

Ana Laura Mendes Campoi[I] *; Angelita Maria Stabile*[I]

[I]*Universidade de São Paulo. Ribeirão Preto, SP, Brazil*

ABSTRACT

Objective: to assess the relationship between the clinical profile of patients with suspected and confirmed sepsis in an emergency unit. **Method:** a quantitative and cross-sectional study developed at the emergency room of a private hospital in inland São Paulo, with analysis of 218 medical records of patients with suspected sepsis treated between January 2019 and April 2020. Descriptive and inferential statistical analysis (Student's t and Mann-Whitney's tests), with a 5% significance level. The study was approved by the Research Ethics Committee. **Results:** in all, 176 of the 218 suspected sepsis cases were classified as confirmed, predominantly in individuals over the age of 60. The patients with confirmed sepsis had higher frequency of significantly altered clinical parameters when compared to those without sepsis ($p<0.05$). **Conclusion:** the vulnerability of individuals over 60 years old and the relevance of strictly monitoring altered clinical parameters were evidenced.
Descriptors: Nursing; Emergency Treatment; Sepsis; Health Profile.

RESUMO

Objetivo: avaliar a relação entre o perfil clínico dos pacientes suspeitos com os confirmados de sepse em uma unidade de emergência. **Método:** estudo quantitativo, transversal, desenvolvido na emergência de um hospital privado no interior do estado de São Paulo, com análise de 218 prontuários de pacientes com suspeita de sepse, atendidos entre janeiro de 2019 e abril de 2020. Análise estatística descritiva e inferencial (testes t-student e Mann-Whitney), com nível de significância de 5%. Estudo aprovado pelo Comitê de Ética em Pesquisa. **Resultados:** dos 218 casos suspeitos de sepse, 176 foram classificados como sepse confirmada, predominando em indivíduos com idade superior a 60 anos. Pacientes com sepse confirmada apresentaram maior frequência de parâmetros clínicos significativamente alterados quando comparados aos não sepse ($p<0,05$). **Conclusão:** evidenciou-se a vulnerabilidade de indivíduos acima de 60 anos e a relevância do monitoramento rigoroso de parâmetros clínicos alterados.
Descritores: Enfermagem; Tratamento de Emergência; Sepse; Perfil de Saúde.

RESUMEN

Objetivo: evaluar la relación entre el perfil clínico de pacientes con sospecha de sepsis y aquellos con diagnóstico confirmado de sepsis en una Unidad de Urgencias. **Método:** estudio cuantitativo, transversal, desarrollado en el servicio de urgencias de un hospital privado del interior del estado de São Paulo, con evaluación de 218 historias clínicas de pacientes con sospecha de sepsis, atendidos entre enero de 2019 y abril de 2020. Se realizó análisis estadístico descriptivo e inferencial (pruebas t- student y Mann-Whitney), con nivel de significancia del 5%. El estudio fue aprobado por el Comité de Ética en Investigación. **Resultados:** de los 218 casos con sospecha de sepsis, 176 fueron clasificados como sepsis confirmada, predominantemente en personas mayores de 60 años. Los pacientes con sepsis confirmada tuvieron una mayor frecuencia de parámetros clínicos significativamente alterados en comparación con aquellos sin sepsis ($p<0,05$). **Conclusión:** se destacó la vulnerabilidad de las personas mayores de 60 años y la relevancia del seguimiento riguroso de los parámetros clínicos alterados.
Descriptores: Enfermería; Tratamiento de Urgencia; Sepsis; Perfil de Salud.

INTRODUCTION

Sepsis is defined as organ dysfunction secondary to a dysregulated host response to a life-threatening infection; in other words, it is a potentially fatal condition that occurs when the body's response to an infection damages its own tissues and organs[1].

The host response to an infectious agent constitutes a basic defense mechanism. In this context, a number of inflammatory phenomena take place, such as production of cytokines, nitric oxide, oxygen free radicals and expression of adhesion molecules in the endothelium, in addition to changes in the coagulation and fibrinolysis processes. All these inflammatory actions are intended to combat the infectious aggression. At the same time, the body counter-regulates this response by triggering anti-inflammatory actions. The balance between the inflammatory and anti-inflammatory processes is essential for a patient's recovery. Any imbalance in these phenomena results in organ dysfunctions[2].

Corresponding author: Ana Laura Mendes Campoi. E-mail: ana.campoi@usp.br
Editor in Chief: Cristiane Helena Gallasch; Associate Editor: Cintia Silva Fassarella

Received: Mar 14th 2024 – Accepted: Dec 11th 2024

DOI: https://doi.org/10.12957/reuerj.2024.82810

The Latin American Sepsis Institute (*Instituto Latinoamericano de Sepsis*, ILAS) adopted a new nomenclature in 2019: "*infection without dysfunction, sepsis or septic shock*", suppressing the expression "*severe sepsis*". The organ dysfunction level for meeting the sepsis criterion was defined as a 2-point increase in the Sequential Organ Failure Assessment (SOFA) score as a consequence of an infection. Septic shock came to be defined as persistent arterial hypotension requiring vasopressors to maintain the Mean Arterial Pressure (MAP) above 6 mmHg, associated with serum lactate levels >2 mmol/L after adequate volume resuscitation. With these criteria, hospital mortality exceeds 40%[1,3].

The precise incidence of sepsis at the global level is unknown, as population-based studies on this condition are scarce, particularly in low- and middle-income countries. However, extrapolations of population-based data from high-income countries suggest 30 million sepsis cases, with approximately six million deaths worldwide each year[4].

The numbers have increased considerably in Brazil. Studies show that the annual incidence of sepsis increased 50.5% from 2006 to 2015, rising from 31.5/100,000 to 47.4/100,000 people per year. Regarding mortality in the same period, there was an 85% increase (from 13.3/100,000 to 24.6/100,000 people per year)[5].

Conducted by the Latin American Sepsis Institute in 227 Brazilian Intensive Care Units (ICUs) randomly selected to adequately represent the national scenario, the SPREAD (Sepsis PREvalence Assessment Database) study indicated that 30% of the country's ICU beds are occupied by patients with sepsis or septic shock, with 55% mortality in these subjects[6].

The increase in sepsis cases can be related to the higher number of aged individuals and immunocompromised or chronically-ill patients, to the widespread use of invasive therapeutic and/or diagnostic procedures, and to presence of multidrug resistant bacteria in health institutions[2]. The increasing number of cases shows the importance of early detecting the characteristic signs of sepsis and highlights the need to implement efficient coping strategies aiming at prevention, timely diagnosis and appropriate treatment[6].

Considered a medical emergency, sepsis is the leading cause of death due to infection, especially if not treated immediately. It is known that there is no gold standard test to diagnose sepsis, as its signs and symptoms are non-specific and can oftentimes resemble several other diseases. Sepsis results from Systemic Inflammatory Response Syndrome (SIRS) as response to a suspected or confirmed infection in a host, through presence of at least one of the following conditions: axillary temperature >38°C or <36°C; heart rate >90 beats per minute (bpm), respiratory rate (RR) above 20 breadths per minute (brpm) or partial pressure of carbon dioxide ($PaCO_2$) <32 mmHg, white blood cell count >12,000/mm^3 or <4,000/mm^3 or >10% of immature bands[7]. Using SIRS criteria as a tool to identify sepsis has been recognized as limited due to its high sensitivity and low specificity. However, it is important to note that, although SRIS is not employed to define sepsis, it continues to be important as a strategic screening component for early suspecting presence of an infection and the potential risk of presenting sepsis or septic shock[2].

Approximately 80% of all sepsis cases begin outside hospital settings[8], which indicates that they are identified in emergency units, which are a hospital's gateway. A study conducted at the Emergency Department of a public university hospital in Brazil showed that 43.4% of the patients were admitted to the institution with some sepsis-related organ dysfunction and that 74.4% of the subjects with septic shock evolved to death[9]. In this context, sepsis screening consists in actively searching for signs suggestive of infection and detectable clinical dysfunctions in patients treated in an emergency room, the place for the attending team to conduct an initial assessment.

Characterizing the clinical profile of patients with suspected sepsis in emergency units is essential to improve early detection and management of this condition. By identifying vulnerability patterns, it becomes possible to optimize resources and train teams for timely interventions. Therefore, studies on the clinical profile of patients with suspected sepsis are fundametnal to reduce adverse outcomes, including high in-hospital mortality rates and costs related to inadequate or late treatments.

Seeking to understand the population served and to improve care actions, this study aimed at evaluating the relationship between the clinical profile of patients with suspected sepsis and that of those with confirmed sepsis in an emergency unit.

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METHOD

This is a correlational and cross-sectional study that was developed based on records from the Hospital Infection Control Service (*Serviço de Controle de Infecção Hospitalar*, SCIH), which analyzes all the processes involved and introduces the data into an Excel spreadsheet for monitoring in relation to adequate filling-in and management of adherence to the medical records protocol.

The study population was comprised by suspected sepsis cases treated at the Emergency Unit from January 2019 to April 2020. The sample consisted of patients treated at the Emergency Department of a private hospital located in a city with more than 350,000 inhabitants from inland São Paulo. The records included were those of patients over the age of 18, of both genders, treated at the institution's Emergency Department with suspected sepsis.

In the emergency triage room, the Nursing team identifies patients with suspected sepsis based on recognizing SIRS signs and calls the physician in charge, who decides whether or not to follow the protocol in view of the information available for decision-making regarding the probability of sepsis. Thus, in the case of all patients for whom the medical team chooses to follow the protocol, the one-hour package is performed, with a reassessment over the first 6 hours.

In the institution, sepsis is diagnosed when at least two of the following criteria are met: axillary temperature >38ºC or <36ºC, HR >90 bpm; RR >20 brpm or $PaCO_2$ <32 mmHg; white blood cells >15,000 or <4,000, with left shift (>10% of sticks), acute change in the level of consciousness; glycaemia >140 mg/dL in subjects without diabetes; and Systolic Blood Pressure (SBP) <90 mmHg.

The data collection form was prepared by the author and filled in with the patients' sociodemographic and clinical data using the Microsoft Excel® monitoring spreadsheet from the Hospital Infection Control Service (SCIH) of the institution.

The following variables gathered at admission to the service were considered: sociodemographic characteristics, including gender, age and comorbidities; admission characteristics, including admission date, main complaint, vital signs assessed at admission (systolic blood pressure, diastolic blood pressure, heart rate, respiratory rate, body temperature, capillary blood glucose); laboratory test results collected at admission (lactate, $PaCO_2$, PaO_2, SpO_2, white blood cell count, platelet count, serum concentrations of total bilirubin and fractions, creatinine and culture results collected at admission); and suspected infection focus. The care characteristics collected were as follows: sepsis diagnosis confirmation; infection focus; patient moved to the inpatient ward or ICU; outcome (discharge/death); and outcome date.

Data entry was performed using Microsoft Excel® for Windows® 2010. After validating the spreadsheet, the values were imported into the *Statistical Program Package for the Social Sciences* (SPSS®), version 17.0. Subsequently, simple frequency descriptive analyses were performed for the nominal or categorical variables, and central tendency (mean and median) and dispersion (standard deviation) analyses were carried out for the continuous variables.

Assuming non-normal data distribution by means of the Shapiro Wilk test, the Mann-Whitney or Student's t tests were used to compare statistical differences between the groups of patients with and without sepsis. Pearson's chi-square test was employed to verify possible associations between adherence to the protocol and the outcome. The significance level was 5%.

The research protocol was approved by the Research Ethics Committee (*Comitê de Ética em Pesquisa*, CEP) of the institution involved.

RESULTS

In all, 176 of the suspected cases treated at the Emergency Unit from January 2019 to April 2020 were classified as confirmed sepsis, while 42 were categorized as non-sepsis.

Regarding the type of sepsis, 147 patients were classified as sepsis (83.5%) and 29 as septic shock (16.5%). Table 1 shows the sociodemographic characteristics of the study population.

Among the patients with confirmed sepsis (n=176) there was the predominance of males (51.1%) and a significantly higher number of individuals aged at least 60 years old (79.6%). Systemic Arterial Hypertension (SAH) stood out with 47.7% of the cases among the prevalent comorbidities, followed by heart disease (31.2%) and Diabetes *Mellitus* (DM), which were found in 29.5% of the individuals.

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Table 1: Sociodemographic characteristics of the patients treated in the emergency room according to subsequent sepsis diagnosis confirmation or not. Franca, SP, Brazil, 2020.

Characteristics	Sepsis (n=176) n (%)	Non-sepsis (n=42) n (%)	p-value
Gender			0.072#
Female	86 (48.9)	27 (64.3)	
Male	90 (51.1)	15 (15.7)	
Age			0.000#
≥60 years old	140 (79.6%)	22 (52.4)	
<60 years old	36 (20.4%)	20 (47.6)	
Most prevalent pre-existing comorbidities*			
SAH	84 (47.7)	13 (31.0)	
Heart disease	55 (31.2)	8 (19.0)	
DM	52 (29.5)	6 (14.3)	
Previous stroke	26 (14.8)	3 (7.1)	
Lung disease	25 (14.2)	5 (12.0)	
Neoplasm	20 (11.4)	2 (4.8)	
Hypothyroidism	13 (7.4)	2 (4.8)	
Kidney disease	11 (6.2)	2 (4.8)	
Obesity	9 (5.1)	-	
Neurological disease	5 (2.8)	4 (9.5)	

Notes: *34 patients had more than one comorbidity; #Chi-square test; SAH - Systemic Arterial Hypertension; DM - Diabetes *Mellitus*.

Table 2 presents patients' signs and symptoms at admission.

Table 2: Signs and symptoms presented by the patients at their admission to the Emergency Unit according to subsequent sepsis diagnosis confirmation or not. Franca, SP, Brazil, 2020.

Characteristics	Sepsis (n=176) n (%)	Non-Sepsis (n=42) n (%)	p-value
Most prevalent symptoms at admission*			
Fever	88 (50.0)	25 (59.5)	0.296
Prostration	78 (44.3)	11 (26.2)	**0.032**
Dyspnea/Desaturation	62 (35.2)	11 (26.2)	0.376
Mental confusion	49 (27.8)	5 (12.0)	**0.032**
Nausea/Vomiting	32 (18.2)	2 (4.8)	**0.022**
Abdominal pain	15 (8.5)	6 (14.3)	0.255
Diarrhea	12 (6.8)	2 (4.8)	0.625
Dysuria	7 (4.0)	4 (9.5)	0.140

Key: *27 patients presented more than one symptom at admission.

Regarding the symptoms of the patients with suspected sepsis at thei admission, fever was the most frequently reported one (50.0%), followed by prostration (44.3%), dyspnea (35.2%) and mental confusion (27.8%). It is noted that the subjects with confirmed sepsis had a significantly higher frequency of prostration (p=0.032), mental confusion (p=0.032) and nausea and vomiting (p=0.022) when compared to those without confirmed sepsis diagnoses. Table 3 shows the clinical and laboratory parameters at admission to the Emergency Unit.

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Table 3: Description of the clinical and laboratory parameters corresponding to the patients treated at the Emergency Unit according to subsequent sepsis diagnosis confirmation or not. Franca, SP, Brazil, 2020.

	Sepsis (n=176)		Non-Sepsis (n=42)		
Clinical parameters	**n**	**n (%)**	**n**	**n (%)**	**p-value[#]**
Vital signs					
Systolic Blood Pressure (SBP) (mmHg)	176		42		0.386
Normal		75 (42.6)		21 (50.0)	
Altered		101(57.4)		21 (50.0)	
Diastolic Blood Pressure (DBP) (mmHg)	176		42		0.320
Normal		57 (32.4)		17 (40.5)	
Altered		119 (67.6)		25 (59.5)	
Mean Arterial Pressure (MAP) (mmHg)	176		42		**0.049**
Normal		92 (52.3)		29 (69.0)	
Altered		84 (47.7)		13 (31.0)	
Heart Rate (HR) (bpm)	175		42		**0.015**
Normal		62 (35.4)		10 (23.8)	
Altered		113 (64.6)		32 (76.2)	
Respiratory Rate (RR) (brpm)	172		37		**0.011**
Normal		86 (50.0)		27 (73.0)	
Altered		86 (50.0)		10 (27.0)	
Body Temperature (T_{ax})(°C)	171		41		0.089
Normal		59 (34.5)		20 (48.8)	
Altered		112 (65.5)		21 (51.2)	
Glasgow Coma Scale (points)	166		39		**0.000**
Normal		59 (35.5)		28 (71.8)	
Altered		107 (64.5)		11 (28.2)	
Laboratory tests					
Capillary blood glucose (mg/dL)	151		36		**0.001**
Normal		66 (43.7)		27 (75.0)	
Altered		85 (56.3)		9 (25.0)	
Initial lactate (mmol/L)	176		42		**0.000**
Normal		53 (30.1)		38 (90.5)	
Altered		123 (69.9)		4 (9.5)	
Partial CO_2 pressure ($PaCO_2$) (mmHg)	166		37		0.727
Normal		36 (21.7)		9 (24.3)	
Altered		130 (78.3)		28 (75.7)	
Partial O_2 pressure (PO_2) (mmHg)	166		38		**0.035**
Normal		38 (22.9)		15 (39.5)	
Altered		128 (77.1)		23 (60.5)	
O_2 saturation (SpO_2) (%)	165		39		**0.043**
Normal		41 (24.8)		16 (41.0)	
Altered		124 (75.2)		23 (59.0)	
White blood cells (mm^3)	166		39		0.465
Normal		66 (39.8)		18 (46.2)	
Altered		100 (60.2)		21 (53.8)	
Total Bilirubin and Fractions (TBF) (mg/dL)	159		38		**0.014**
Normal		112 (70.4)		34 (89.5)	
Altered		47 (29.6)		4 (10.5)	
Creatinine (mg/dL)	163		37		0.670
Normal		73 (44.8)		18 (48.6)	
Altered		90 (55.2)		19 (51.4)	

Note: [#] Chi-square test.

Regarding the clinical parameters at admission to the Emergency Unit, the patients with confirmed sepsis presented worse values in Mean Arterial Pressure (MAP) (p=0.049), heart rate (p=0.015), respiratory rate (p=0.011) and Glasgow coma scale (p<0.000) when compared to the non-septic subjects, with a statistically significant difference.

Regarding the laboratory parameters at admission to the Emergency Unit, it was observed that the patients with subsequent sepsis diagnosis confirmation presented significantly worse values in capillary blood glucose (p=0.01),

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lactate (p<0.000), partial O_2 pressure (PO_2) (p=0.035), O_2saturation (p=0.043) and total bilirubin (p=0.014), when compared to those found in non-septic patients.

Regarding the infection focus, the urinary tract (n=75; 42.6%) was predominant, followed by lungs (n=58; 33.0%), skin (n=13; 7.4%), abdomen (n=10; 5.7%) and bones (n=1; 0.5%). The focus was not identified in 19 patients (10.8%).

Hospitalization time in the patients with confirmed sepsis was significantly longer when compared to the non-sepsis group, ranging from zero to 47 days (mean of five) and from zero to ten days (mean of two), respectively (p=0.003). Regarding the outcome in the subjects with confirmed sepsis, 55.1% of them had improved discharge, while 25% of them evolved to death. No deaths were observed in the non-sepsis group.

DISCUSSION

The results of this study show the prevalence of sepsis in people over 60 years of age. Studies that analyzed the effect of age on sepsis development identified that individuals over 65 years old represented 64.9% of the sepsis cases, with a 13.1 times higher relative risk of sepsis when compared to younger patients[10]. These data are related to the immunosenescence inherent to aged people, which makes them more susceptible to infectious processes[11].

As age advances, the physiological reflexes that contribute to the body's physical defense mechanisms against infections may deteriorate. In addition, older people may present adverse signs and symptoms (hypothermia, leukopenia) or non-specific infection signs, which hinders diagnosis because advanced-age patients with sepsis generally do not manifest characteristic clinical responses[12].

The mortality rates in aged individuals with sepsis range from 50% to 60%, which is from 1.3 to 1.5 times higher than in younger individuals[10,13-15]. A study found that 55.6% of the patients admitted with sepsis were elderly and that the mortality rate among this population segment reached 68%[16]. Poor prognostic factors include presence of shock, high serum lactate levels and presence of organ failures, especially lungs and heart[15].

This combination of factors contributes to greater clinical severity and worse prognosis in aged patients with sepsis, increasing the need for more complex and prolonged therapeutic interventions. Furthermore, as observed in this study, the high frequency of comorbidities associated with aging also plays a significant role in sepsis susceptibility and progression in this age group. Aged individuals with comorbidities are more likely to develop multiple organ dysfunctions and have higher mortality rates when compared to younger patients[13]. Therefore, strategies aimed at early diagnosis and individualized management in elderly patients are crucial to improve outcomes and reduce sepsis-associated mortality in this vulnerable population.

Although with no statistical significance, higher prevalence of males was observed in this research. A study conducted in the ICU of a public hospital from Paraná described the epidemiological characteristics of septic patients and showed prevalence of males (55.7%)[16], which was also evidenced in another study that analyzed patients with sepsis criteria at hospital admission[17]. Another national study showed that 94 of 152 hospitalized patients who met the sepsis criteria were male[18].

The factors leading to high morbidity and mortality among men are a consequence of lifestyles and habits that imply greater risk factors, in addition to their low demand for health services. Furthermore, most men only seek assistance when they present some clinical sign or symptom that compromises their activities of daily living[19,20].

These behaviors exert a direct impact on the clinical evolution of cases, as seeking medical care late in time can delay sepsis diagnosis and initiation of its treatment, contributing to deteriorating the condition and to higher mortality rates. Studies indicate that men tend to have worse progression in serious health conditions such as sepsis precisely due to the combination of behavioral and physiological factors that affect the immune response and adherence to the treatment[20]. Therefore, it is essential to understand gender differences in the sepsis context to develop prevention and approach strategies that consider these particularities, promoting greater equality and effectiveness in health care.

The results draw the attention to the high prevalence of comorbidities such as hypertension (n=84) and heart disease (n=55). These data corroborate another national study that found high frequency of comorbidities among patients, with predominance of hypertension (45.9%) and followed by cardiovascular system pathologies (19.3%)[16]. The presence of comorbidities reflects advanced age or, certainly, greater susceptibility to developing serious complications in the population with chronic diseases[20]. It is noted that associated diseases constitute a predisposing factor for developing sepsis, and consequently contribute to worsening a patient's prognosis[21].

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These findings highlight the importance of closer clinical monitoring and targeted therapeutic strategies for patients with comorbidities, as these conditions not only increase the risk of sepsis but are also associated with higher mortality rates and worse clinical outcomes.

Regarding the infection focus, the results of this research differ from those obtained in other national studies, which indicate pulmonary infections as the most frequent, followed by abdominal infections[16,22]. A national study conducted at a public hospital with aged people treated in the emergency room corroborates the findings of this research when it presents in its results the urinary tract as the primary infection site with the highest recurrence[23]. This is in line with a study developed in Colombia, where 27.8% of the sepsis cases had the urinary tract as infection focus, followed by the respiratory system (27.5%)[24].

These findings highlight the relevance of considering the specific characteristics of the population under study, such as advanced age and presence of comorbidities, which may influence the prevalence of infectious foci, in addition to reinforcing the importance of prevention strategies and early management of urinary infections to reduce the risks of sepsis and its complications.

Individuals with sepsis present alterations in their vital signs and laboratory parameters. It is noted that the patients with subsequent sepsis diagnosis confirmation had worse results at admission. This is in line with the condition under study, as sepsis can result in significant organ dysfunction. The clinical manifestations presented by the patients at admission are consistent with the pathophysiology of sepsis. In the current study, impairments were identified in the cardiovascular system (hypotension and hyperlactatemia), in the respiratory system (tachypnea and hypoxemia), in the neurological system (confusion9 and in the endocrine/metabolic system (hyperglycemia).

In this study, 54.5% of the patients with confirmed sepsis had altered lactate levels, corroborating another survey that identified hyperlactatemia in 50.3% of its subjects[25]. Although serum lactate is not a tissue perfusion direct measure, it is considered an important marker of tissue hypoperfusion, a sepsis-induced condition[26]. Therefore, if high (above 2 mmol/L), it should be measured again within two-four hours to guide volume resuscitation, aiming at normalizing its levels[3,27].

Respiratory failure is one of the most common complications found in septic patients[28]; this can be observed in the results of this study, as it was identified that the patients with subsequent sepsis diagnosis confirmation presented lower O_2 saturation and partial O_2 pressure levels when compared to non-septic ones.

Nurses' role is crucial in this scenario, as they are at the patients' bedside at all moments. They are the professionals that assess clinical manifestations early in time, provide comprehensive care to the patients in all their basic human needs and suggest (together with the multidisciplinary team) the appropriate actions to be taken in order to reduce sepsis-related morbidity and mortality.

A study found that the first SIRS signs were predominantly described in the patient monitoring system (92.9%), while the first organ dysfunction signs were described in Nursing records (85.7%)[29]; this reinforces the importance of Nursing records for early recognition and adequate management of sepsis cases. Therefore, it is essential for nurses to be aware of the clinical changes presented by the patients and that they write them down in the medical records, as these alterations assist in identifying risks and managing health processes.

The mean hospitalization time among the patients with confirmed sepsis was five days, which is in line with another study, where it was up to one week (50.4%)[16]. This period was longer in the subjects with confirmed sepsis than in those without sepsis, as this is a medical emergency that requires specific therapeutic resources with a need for constant multidisciplinary observation. In addition, the literature indicates that the mean hospitalization time among patients with sepsis in an ICU is seven days[31].

In another national study, it was observed that 73% of the patients remained in the ICU for up to five days, 14% did so between six and ten days and only 13% for more than ten days[32]. In this sense, it can be considered that sepsis has a rapid clinical evolution and that the outcome is most often unfavorable despite intensive monitoring[33].

Regarding the outcomes of the patients with confirmed sepsis, 25% evolved to death, corroborating the overall mortality reported in a previous study (24.4%)[22]. Both these values are lower than the Brazilian mortality reported by the SPREAD (55.7%) and PROGRESS (57.4%) studies[5,34]. This difference can be justified in part by the private nature of the hospital where the study was conducted, as the results may have been influenced by better infrastructure and human resources. In SPREAD, high mortality was observed in institutions with lower availability

DOI: https://doi.org/10.12957/reuerj.2024.82810

of resources, without the necessary infrastructure for treating sepsis and with insufficient ICU beds, resulting in inadequate treatments and delays in the first antibiotic doses[5].

Study limitations

This was an observational study, and unrecognized confounding variables may have influenced the outcomes observed. Furthermore, as the survey was conducted at a private hospital in the Southeast of the country, the results cannot be extrapolated to other institutions or regions.

CONCLUSION

This study showed that there are differences in signs and symptoms, vital signs and laboratory tests between patients with subsequent sepsis diagnosis confirmation and those without such confirmation, indicating greater physiological impairments at admission to the Emergency Unit. Regarding the clinical profile of the patients analyzed, there was prevalence of aged subjects and more comorbidities, factors that predispose to developing sepsis.

In this context, using protocols guides the nurses' approach to patients with alterations suggestive of sepsis, which allows for quick and safe actions, preventing deterioration of their clinical condition and, consequently, contributing to better prognoses and to reducing hospital costs. Additionally, knowing the profile of the patients who arrive at an Emergency Unit with suspected sepsis and their respective outcomes helps define strategies aimed at early detection and appropriate treatment, with a focus on care quality and safety.

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Author's contributions

Conceptualization, A.L.M.C. and A.M.S.; methodology, A.M.S.; validation, A.L.M.C. and A.M.S.; formal analysis, A.L.M.C. and A.M.S.; investigation, A.L.M.C. and A.M.S.; data curation, A.L.M.C. and A.M.S.; manuscript writing, A.L.M.C.; writing – review and editing, A.M.S.; visualization, A.L.M.C. and A.M.S.; supervision, A.M.S.; project administration, A.M.S. All authors read and agreed with the published version of the manuscript.