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Diagnostic Accuracy of pSOFA and qSOFA in Predicting Mortality among Children with Sepsis: A Cross-Sectional Observational Study

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KEYWORDS

Sepsis, Diagnostic accuracy, pSOFA, qSOFA, ROC analysis, PICU, India

ABSTRACT:

Introduction: Sepsis, a life-threatening condition, continues to pose a substantial burden on healthcare systems worldwide. Prompt assessment of severity of illness at admission is crucial for initiating timely intervention and improving survival rates.

Objective: To evaluate the diagnostic accuracy of pSOFA and qSOFA in predicting mortality.

Methods: This was a single centre observational cross-sectional study conducted among children in the age group of 1 month to 15 years admitted to the Paediatric Intensive Care Unit (PICU) with sepsis (irrespective of the probable etiology; n = 50) between January 2023, and December 2023.

Results: The results showed that the non survivors had a significantly lower age (MD -26.9, 95% CI -40.4 to -13.4), higher pSOFA (MD 6.6, 95% CI 0.9 to 4.4), and qSOFA (MD 0.9, 95% CI 0.5 to 1.2) scores, in comparison with survivors ($p<0.05$). Receiver operating curve (ROC) analysis to predict mortality showed that the area under curve was significant for both pSOFA (0.979, 95% CI 0.928 to 1.000) and qSOFA (0.813, 95% CI 0.646 to 0.979) scores; however, AUC was higher for pSOFA. The sensitivity, specificity, PPV, and NPV were 100%, 41.7%, 22.2% and 100% for pSOFA; and 100%, 20.8%, 17.4%, and 100% qSOFA scores.

Conclusion: Our study underscores the critical importance of timely identification and risk stratification in paediatric patients with sepsis. Notably, the predictive ability of pSOFA scores (4 and above) appeared superior to that of qSOFA (2 and above).

Introduction

Sepsis remains a leading cause of morbidity and mortality among children worldwide, particularly in critical care settings such as the Pediatric Intensive Care Unit (PICU).(1) Despite advances in medical care, sepsis outcomes in pediatric populations continue to be a significant concern due to the complex and dynamic nature of the condition, which can lead to rapid deterioration and multi-organ failure.(2, 3) Early identification and prompt management of sepsis are crucial to improving outcomes, necessitating reliable and accurate diagnostic tools.(4)

The Sequential Organ Failure Assessment (SOFA) score, originally developed for adult patients,(5) has been adapted into a Pediatric Sequential Organ Failure Assessment (pSOFA) score to assess organ dysfunction and predict outcomes in critically ill children.(6) The pSOFA score evaluates multiple organ systems, including respiratory, cardiovascular, hepatic, coagulation, renal, and neurological functions, providing a comprehensive picture of a child's clinical status.(7) In contrast, the Quick Sequential Organ Failure Assessment (qSOFA) score offers a simpler and more rapid assessment, focusing on three criteria: altered mentation, systolic blood pressure ≤100 mmHg, and respiratory rate ≥22 breaths per minute.(8, 9) While qSOFA is designed for ease of use and quick identification of patients at risk

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of sepsis in various settings, its effectiveness in pediatric populations remains a topic of debate.(10)

Several studies have investigated the utility of pSOFA and qSOFA scores in predicting adverse outcomes in sepsis. For example, Garbero et al.(11) (2019) reported that the sensitivity of qSOFA for predicting mortality, ICU admission, and the need for mechanical ventilation was suboptimal in adult patients. However, the applicability and accuracy of these scores in pediatric patients, particularly in low-resource settings, require further exploration. This study aims to evaluate the diagnostic accuracy of pSOFA and qSOFA scores in predicting unfavourable outcomes, specifically mortality, among pediatric patients with sepsis admitted to the PICU.

Materials and Methods

This was a hospital based (single centre) observational cross-sectional study conducted in the Paediatric Intensive Care Unit (PICU) attached to the Department of Paediatrics, Rajarajeswari Medical College & Hospital, Bangalore, India (a teaching tertiary care hospital) for a duration of 12 months between January 2023, and December 2023. The study was approved by the Institutional Human Ethics Committee (IHEC). The Participant Information Sheet (PIS) was translated into the local language and given to the parents and/or the patients attendants. The information was also verbally explained to them in their native language until they fully understood it. Patients were included in the study after informed written assent form was obtained. All the children in the age group of 1 month to 15 years admitted to the PICU, with sepsis (irrespective of the probable etiology) were enrolled in the present study. However, children with history of illnesses including hemoglobinopathies, autoimmune diseases, hemophagocytic lymphohistiocytosis and chronic hepatitis; history of blood transfusions in past four months; and severe acute malnutrition were excluded from the present study.

Garbero et al.(11) (2019) conducted a retrospective study and noted the sensitivity of qSOFA at admission was 56.8% for death, 41.4% for ICU need and 53.6% for mechanical ventilation.(11) Using this information, considering the alpha error (type I error) to be 5%, beta error (type II error) to be 20%, absolute precision to be 10%, and drop out rate to be 10%, the minimum estimated sample size was 50 with 95% confidence. The patients were enrolled using nonprobability sampling technique – convenient sampling – complete enumeration of all patients in accordance with prespecified inclusion and exclusion criteria. We used a purpose predesigned, semi structured, pretested questionnaire to document the sociodemographic characteristics (including age in months), detailed clinical history, findings of general physical examination, clinical examination, laboratory investigations (including blood, urine and tip of endotracheal tube culture), paediatric Sequential Organ Failure Assessment (pSOFA)(12) and quick Sequential Organ Failure Assessment (qSOFA).(13)

The data obtained was manually entered into Microsoft Excel, coded, recoded and analysed using Stata v16. We tested for data normality using Kolmogorov–Smirnov test and Shapiro–Wilk test. The descriptive analysis was presented using numbers and percentages for categorical variables; mean (standard deviation (SD)) or median (interquartile range (IQR)) for continuous variables. Appropriate graphs were made. Chi square test of significance (two-sided) or independent "t" tests (two-sided) was applied to test for association – Odds ratio (OR) or mean difference (MD) was presented with 95% confidence interval (95% CI). Receiver operating characteristic (ROC) analysis was performed and area under the curve (AUC) was estimated with 95% CI. The indicators of diagnostic accuracy – sensitivity, specificity, positive and negative predictive values, positive and negative likelihood ratios – were computed with cross tabulations.

Results

The present study included a total of 50 patients in the age group of 1 month to 15 years admitted to the PICU, with sepsis (irrespective of the probable etiology). More than half (54.0%) were females. Of the 50 patients, seven died (referred to as non survivors; 14.0%) and 43 patients (86.0%) survived. The mean (SD) age of the patients was 26.3 months (30.9) – 3.3 months (1.3) among non survivors and 30.1 months (31.8) among survivors. The test of association showed that the difference in age (MD -26.9 months, 95% CI -40.4 to -13.4) among non survivors and survivors (lower age among non survivors, in comparison with survivors) was found to be statistically significant ($p<0.05$). The mean (SD) duration of PICU stay among non survivors was 15.8 days (4.5), and that among survivors was 12.8 days (5.9) – the difference in duration of PICU stay (MD 2.9 days, 95% CI -3.6 to 9.6) among non survivors and survivors (longer duration of PICU stay among non survivors, in comparison with survivors) was not found to be statistically significant ($p>0.05$). The mean (SD) pSOFA scale scores among non survivors was 12.3 (1.5) and that among survivors was 5.6 (2.6) – the pSOFA scores among non survivors was found to be significantly ($p<0.05$) higher, in comparison with survivors (MD 6.6, 95% CI 0.9 to 4.4). Similarly, the mean (SD) qSOFA scale scores among non survivors was 3.0 (0.0) and that among survivors was 2.1 (0.8) – the qSOFA scale scores were significantly higher ($p<0.05$) among non survivors, in comparison with survivors with a mean difference of 0.9 (95% 0.5 to 1.2).

The results showed that the non survivors and survivors did not vary significantly ($p>0.05$) by gender (71.4% non survivors and 51.2% survivors were females), results of blood culture (0.0% among non survivors and 16.3% among survivors had positive blood culture), results of urine culture (0.0% among non survivors and 9.3% among survivors had positive urine culture), and tip of endotracheal tube culture (0.0% among non survivors and 16.3% among survivors had positive ET tube culture). Among non survivors, 28.6% had pulmonary infections, 28.6% had urinary tract infections, 28.6% had soft tissue infections, 14.2% had central nervous system infections and none (0.0%) had bloodstream infections. Among survivors, 79.1% had pulmonary infections, 7.0% had soft tissue infections, 11.6% had blood stream infections, 2.3% had CNS infections and none had urinary tract infections. The test of association showed that the rates of non-pulmonary infections were significantly higher among non survivors and pulmonary infections were higher among survivors – the difference was found to be statistically significant ($p<0.05$) with an odd ratio of 0.11 (95% CI 0.02 to 0.64).

The receiver operating characteristic (ROC) analysis to predict mortality showed that the area under curve was significant ($p<0.05$) for both pSOFA (0.979, 95% CI 0.928 to 1.000) and qSOFA (0.813, 95% CI 0.646 to 0.979) scores; however, AUC was higher for pSOFA. The sensitivity, specificity, PPV, and NPV were 100%, 41.7%, 22.2% and 100% for pSOFA (at scores 4 and above); and 100%, 20.8%, 17.4%, and 100% qSOFA scores (at scores 2 and above).

Discussion

The present study aimed to evaluate the diagnostic accuracy of the paediatric Sequential Organ Failure Assessment (pSOFA) and quick Sequential Organ Failure Assessment (qSOFA) scores in predicting mortality among paediatric patients with sepsis admitted to a PICU. The findings indicate that pSOFA scores exhibit higher diagnostic accuracy compared to qSOFA scores,(14) which aligns with and expands upon previous research in this domain. The ROC analysis indicated that the area under the curve (AUC) for pSOFA was 0.979 (95% CI 0.928 to 1.000), significantly higher than the AUC for qSOFA, which was 0.813 (95% CI 0.646 to 0.979). The high AUC for pSOFA suggests excellent discriminatory ability in predicting mortality. The sensitivity and negative predictive value (NPV) were 100% for both scores, indicating that both pSOFA and qSOFA are highly effective in identifying patients who will not succumb to sepsis. However, the specificity and positive predictive value (PPV) were higher for pSOFA (41.7% and 22.2%, respectively) compared to qSOFA (20.8% and 17.4%, respectively), emphasizing pSOFA's better overall diagnostic accuracy. These findings are consistent with prior research indicating that pSOFA is a more reliable tool for predicting adverse outcomes in paediatric sepsis compared to qSOFA.(15, 16) For instance, Matics and Sanchez-Pinto (2017) adapted and validated the pSOFA score,(17) demonstrating its effectiveness in predicting mortality and organ dysfunction in critically ill children. Similarly, Weiss et al.(18) (2020) emphasized the importance of comprehensive organ dysfunction assessment, which is better captured by pSOFA.

The lower specificity and PPV of qSOFA align with previous findings that suggest qSOFA may be less reliable in paediatric populations due to its simplicity and limited criteria (Seymour et al., 2016).(19) While qSOFA is designed for quick assessment and ease of use, its limited scope may miss critical aspects of paediatric sepsis severity, thus reducing its specificity and predictive accuracy.(20) The superior performance of pSOFA in predicting mortality has significant clinical implications. In the PICU, early and accurate identification of high-risk patients is crucial for timely intervention and treatment. The high sensitivity and NPV of both scores ensure that patients who are not at risk of mortality are correctly identified, thus avoiding unnecessary aggressive interventions. However, the higher specificity and PPV of pSOFA mean that it is more effective in correctly identifying patients who are at risk of mortality, enabling targeted and appropriate clinical responses. Implementing pSOFA in clinical practice can improve patient outcomes by facilitating early diagnosis and management of sepsis. This is particularly important given the dynamic and rapidly evolving nature of sepsis in pediatric patients.(21) By providing a more accurate assessment of organ dysfunction, pSOFA helps clinicians prioritize patients who need urgent care and allocate resources more effectively.

The study revealed that non-survivors and survivors did not significantly differ by gender, blood culture results, urine culture results, or endotracheal tube culture results. Specifically, 71.4% of non-survivors and 51.2% of survivors were female. Blood culture positivity was observed in 0.0% of non-survivors and 16.3% of survivors, urine culture positivity in 0.0% of non-survivors and 9.3% of survivors, and endotracheal tube culture positivity in 0.0% of non-survivors and 16.3% of survivors. These findings indicate that positive culture results were more common among survivors, although these differences were not statistically significant ($p>0.05$).

Among the infection types, non-survivors had a higher incidence of non-pulmonary infections, whereas pulmonary infections were significantly more common among survivors. Specifically, 28.6% of non-survivors had pulmonary infections, urinary tract infections, and soft tissue infections each, while 14.2% had central nervous system infections and none had bloodstream infections. In contrast, 79.1% of survivors had pulmonary infections, 7.0% had soft tissue infections, 11.6% had bloodstream infections, 2.3% had central nervous system infections, and none had urinary tract infections. The difference in infection types between non-survivors and survivors was statistically significant ($p<0.05$), with an odds ratio of 0.11 (95% CI 0.02 to 0.64), indicating that non-pulmonary infections were significantly more common in non-survivors. Our findings on the distribution of infection types and their association with mortality align with existing literature. Previous studies have demonstrated that pulmonary infections are often associated with better outcomes compared to non-pulmonary infections in pediatric sepsis (Weiss et al., 2020).(18) Pulmonary infections may be more easily managed and treated compared to other infection types such as central nervous system or bloodstream infections, which are often more severe and harder to treat (Balamuth et al., 2015).(22) The lack of significant differences in culture positivity rates between survivors and non-survivors' contrasts with some studies that have shown higher mortality associated with positive cultures, especially bloodstream infections (Schlapbach et al., 2018).(23) However, our results suggest that factors other than the mere presence of infection, such as the type and location of infection, may play a more critical role in determining outcomes.(24) The study's findings underscore the importance of considering infection type and location in the prognosis and management of pediatric sepsis. The significantly higher rates of non-pulmonary infections among non-survivors highlight the need for aggressive management and close monitoring of such infections.(25, 26) Clinicians should prioritize early identification and treatment of non-pulmonary infections to improve survival rates. Furthermore, the higher prevalence of pulmonary infections among survivors suggests that these infections may be less fatal or more responsive to treatment in pediatric sepsis. This finding supports the use of targeted therapeutic strategies that address the specific type and location of infections.

Limitations

Despite these promising findings, the study has several limitations. The single-centre design limits the generalizability of the results. Additionally, the sample size, although calculated to be sufficient, was relatively small, which may impact the robustness of the findings. Further multicentre studies with larger sample sizes are needed to validate these results and establish broader applicability. The study's observational design also limits the ability to establish causality. Future research should consider longitudinal studies to better understand the temporal relationships between pSOFA and qSOFA scores and patient outcomes. Moreover, the exclusion criteria, which included certain chronic and severe acute conditions, may have introduced selection bias.

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Conclusion

The present study provides valuable insights into the diagnostic accuracy of pSOFA and qSOFA scores in predicting mortality among pediatric patients with sepsis in the PICU. Our findings demonstrate that while both pSOFA and qSOFA scores are significant predictors of mortality, pSOFA exhibits superior diagnostic performance. The area under the curve (AUC) for pSOFA was significantly higher than for qSOFA, indicating better discriminatory ability. Additionally, pSOFA showed higher specificity and positive predictive value (PPV), further underscoring its effectiveness in identifying high-risk patients. The study underscores the importance of using comprehensive and detailed assessment tools like pSOFA for early identification and management of sepsis in critically ill children. Implementing pSOFA in clinical practice can potentially improve patient outcomes by facilitating timely and appropriate interventions. Given its higher sensitivity, specificity, and overall diagnostic accuracy, pSOFA should be considered a valuable tool in the PICU for managing pediatric sepsis. In conclusion, pSOFA outperforms qSOFA in predicting mortality in pediatric sepsis, and its implementation in clinical practice could significantly enhance the early identification and management of high-risk patients, ultimately improving clinical outcomes in the PICU.

References

1. Rudd KE, Johnson SC, Agesa KM, Shackelford KA, Tsoi D, Kievlan DR, et al. Global, regional, and national sepsis incidence and mortality, 1990-2017: analysis for the Global Burden of Disease Study. Lancet. 2020;395(10219):200-11.
2. Mathias B, Mira JC, Larson SD. Pediatric sepsis. Curr Opin Pediatr. 2016;28(3):380-7.
3. Hotchkiss RS, Moldawer LL, Opal SM, Reinhart K, Turnbull IR, Vincent JL. Sepsis and septic shock. Nat Rev Dis Primers. 2016;2:16045.
4. Kim HI, Park S. Sepsis: Early Recognition and Optimized Treatment. Tuberc Respir Dis (Seoul). 2019;82(1):6-14.
5. Moreno R, Rhodes A, Piquilloud L, Hernandez G, Takala J, Gershengorn HB, et al. The Sequential Organ Failure Assessment (SOFA) Score: has the time come for an update? Crit Care. 2023;27(1):15.
6. Malik A, Taksande A, Meshram R. Pediatric Sequential Organ Assessment Score: A Comprehensive Review of the Prognostic Marker in the Pediatric Intensive Care Unit. Cureus. 2024;16(5):e60034.
7. Lalitha AV, Satish JK, Reddy M, Ghosh S, George J, Pujari C. Sequential Organ Failure Assessment Score As a Predictor of Outcome in Sepsis in Pediatric Intensive Care Unit. J Pediatr Intensive Care. 2021;10(2):110-7.
8. Park JE, Hwang SY, Jo IJ, Sim MS, Cha WC, Yoon H, et al. Accuracy of the qSOFA Score and RED Sign in Predicting Critical Care Requirements in Patients with Suspected Infection in the Emergency Department: A Retrospective Observational Study. Medicina (Kaunas). 2020;56(1).
9. Lo RSL, Leung LY, Brabrand M, Yeung CY, Chan SY, Lam CCY, et al. qSOFA is a Poor Predictor of Short-Term Mortality in All Patients: A Systematic Review of 410,000 Patients. J Clin Med. 2019;8(1).
10. van Nassau SC, van Beek RH, Driessen GJ, Hazelzet JA, van Wering HM, Boeddha NP. Translating Sepsis-3 Criteria in Children: Prognostic Accuracy of Age-Adjusted Quick SOFA Score in Children Visiting the Emergency Department With Suspected Bacterial Infection. Front Pediatr. 2018;6:266.
11. Garbero RF, Simões AA, Martins GA, Cruz LVD, von Zuben VGM. SOFA and qSOFA at admission to the emergency department: Diagnostic sensitivity and relation with prognosis in patients with suspected infection. Turk J Emerg Med. 2019;19(3):106-10.
12. Balamuth F, Scott HF, Weiss SL, Webb M, Chamberlain JM, Bajaj L, et al. Validation of the Pediatric Sequential Organ Failure Assessment Score and Evaluation of Third International Consensus Definitions for Sepsis and Septic Shock Definitions in the Pediatric Emergency Department. JAMA Pediatr. 2022;176(7):672-8.
13. Sohn YW, Jang HY, Park S, Lee Y, Cho YS, Park J, et al. Validation of quick sequential organ failure assessment score for poor outcome prediction among

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JCHR (2025) 15(3), 815 - 823 | ISSN:2251-6727

emergency department patients with suspected infection. Clin Exp Emerg Med. 2019;6(4):314-20.

14. Wang C, Xu R, Zeng Y, Zhao Y, Hu X. A comparison of qSOFA, SIRS and NEWS in predicting the accuracy of mortality in patients with suspected sepsis: A meta-analysis. PLoS One. 2022;17(4):e0266755.

15. Zhao C, Xin MY, Li J, Zhao JF, Wang YJ, Wang W, et al. Comparing the precision of the pSOFA and SIRS scores in predicting sepsis-related deaths among hospitalized children: a multi-center retrospective cohort study. World J Emerg Med. 2022;13(4):259-65.

16. Rosenzweig A, Yuki K. Predictability of Pediatric Sepsis Outcome Using SEPSIS-3 Definition in a Single Tertiary Pediatric Institution. Transl Perioper Pain Med. 2023;10(2):515-21.

17. Matics TJ, Sanchez-Pinto LN. Adaptation and Validation of a Pediatric Sequential Organ Failure Assessment Score and Evaluation of the Sepsis-3 Definitions in Critically Ill Children. JAMA Pediatr. 2017;171(10):e172352.

18. Weiss SL, Peters MJ, Alhazzani W, Agus MSD, Flori HR, Inwald DP, et al. Surviving sepsis campaign international guidelines for the management of septic shock and sepsis-associated organ dysfunction in children. Intensive Care Med. 2020;46(Suppl 1):10-67.

19. Seymour CW, Liu VX, Iwashyna TJ, Brunkhorst FM, Rea TD, Scherag A, et al. Assessment of Clinical Criteria for Sepsis: For the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). Jama. 2016;315(8):762-74.

20. Eun S, Kim H, Kim HY, Lee M, Bae GE, Kim H, et al. Age-adjusted quick Sequential Organ Failure Assessment score for predicting mortality and disease severity in children with infection: a systematic review and meta-analysis. Sci Rep. 2021;11(1):21699.

21. Khwannimit B, Bhurayanontachai R, Vattanavanit V. Comparison of the performance of SOFA, qSOFA and SIRS for predicting mortality and organ failure among sepsis patients admitted to the intensive care unit in a middle-income country. J Crit Care. 2018;44:156-60.

22. Balamuth F, Alpern ER, Abbadessa MK, Hayes K, Schast A, Lavelle J, et al. Improving Recognition of Pediatric Severe Sepsis in the Emergency Department: Contributions of a Vital Sign-Based Electronic Alert and Bedside Clinician Identification. Ann Emerg Med. 2017;70(6):759-68.e2.

23. Schlapbach LJ, Straney L, Alexander J, MacLaren G, Festa M, Schibler A, et al. Mortality related to invasive infections, sepsis, and septic shock in critically ill children in Australia and New Zealand, 2002-13: a multicentre retrospective cohort study. Lancet Infect Dis. 2015;15(1):46-54.

24. van Seventer JM, Hochberg NS. Principles of Infectious Diseases: Transmission, Diagnosis, Prevention, and Control. International Encyclopedia of Public Health. 2017:24.

25. Randolph AG, McCulloh RJ. Pediatric sepsis: important considerations for diagnosing and managing severe infections in infants, children, and adolescents. Virulence. 2014;5(1):179-89.

26. Cruz AT, Lane RD, Balamuth F, Aronson PL, Ashby DW, Neuman MI, et al. Updates on pediatric sepsis. Journal of the American College of Emergency Physicians Open. 2020;1(5):981-93.

Table 1: Characteristics of survivors and non survivors (continuous variables)

	Non survivors N = 7	**Survivors N = 43**	**All patients N = 50**	**MD (95% CI); p value**
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	
Age (in months)	3.3 (1.3)	30.1 (31.8)	26.3 (30.9)	-26.9 (-40.4 to -13.4); <0.001*

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Duration of PICU stay	15.8 (4.5)	12.8 (5.9)	13.2 (5.8)	2.9 (-3.6 to 9.6); 0.300
pSOFA	12.3 (1.5)	5.6 (2.6)	6.6 (3.4)	6.6 (0.9 to 4.4); <0.001*
qSOFA	3.0 (0.0)	2.1 (0.8)	2.3 (0.8)	0.9 (0.5 to 1.2); <0.001*

*Statistically significant at p<0.05

MD, Mean difference; CI, Confidence interval; qSOFA, quick Sequential Organ Failure Assessment; pSOFA, Paediatric sequential organ failure assessment; SD, Standard deviation; PICU, Paediatric Intensive Care Unit

Table 2: Characteristics of survivors and non survivors (categorical variables)

		Non survivors N = 7 n (%)	Survivors N = 43 n (%)	All patients N = 50 n (%)	OR (95% CI); p value
Gender	Female	5 (71.4)	22 (51.2)	27 (54.0)	2.39 (0.42 to 13.67); 0.329
	Male	2 (28.6)	21 (48.8)	23 (46.0)	
Site of infection	Pulmonary	2 (28.6)	34 (79.1)	36 (72.0)	For pulmonary vs non-pulmonary site 0.11 (0.02 to 0.64); 0.014*
	Urinary	2 (28.6)	0 (0.0)	2 (4.0)	
	Soft tissue	2 (28.6)	3 (7.0)	5 (10.0)	
	Bloodstream	0 (0.0)	5 (11.6)	5 (10.0)	
	CNS	1 (14.2)	1 (2.3)	2 (4.0)	
Blood culture	Positive	0 (0.0)	7 (16.3)	7 (14.0)	0.32 (0.02 to 6.32); 0.457
	Negative	7 (100)	36 (83.7)	43 (86.0)	
Urine culture	Positive	0 (0.0)	4 (9.3)	4 (8.0)	0.59 (0.03 to 12.04); 0.728
	Negative	7 (100)	39 (90.7)	46 (92.0)	
Tip of ET tube culture	Positive	0 (0.0)	7 (16.3)	7 (14.0)	0.32 (0.02 to 6.32); 0.457
	Negative	7 (100)	36 (83.7)	43 (86.0)	

*Statistically significant at p<0.05

OR, Odds ratio; CI, Confidence interval; ET, Endotracheal tube

Table 3: Area under the curves of pSOFA and qSOFA scores to predict hospital mortality

	AUC	Lower CI	Upper CI	p value
pSOFA	0.979	0.928	1.000	0.003*
qSOFA	0.813	0.646	0.979	0.049*

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*Statistically significant at p<0.05

AUC, Area under the curve; CI, Confidence interval

Table 4: Performance of pSOFA and qSOFA in predicting mortality

	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	LR+	LR-
pSOFA (4 and above)	100	41.7	22.2	100	1.7	0.0
qSOFA (2 and above)	100	20.8	17.4	100	1.26	0.0

AUC, Area under the curve; CI, Confidence interval

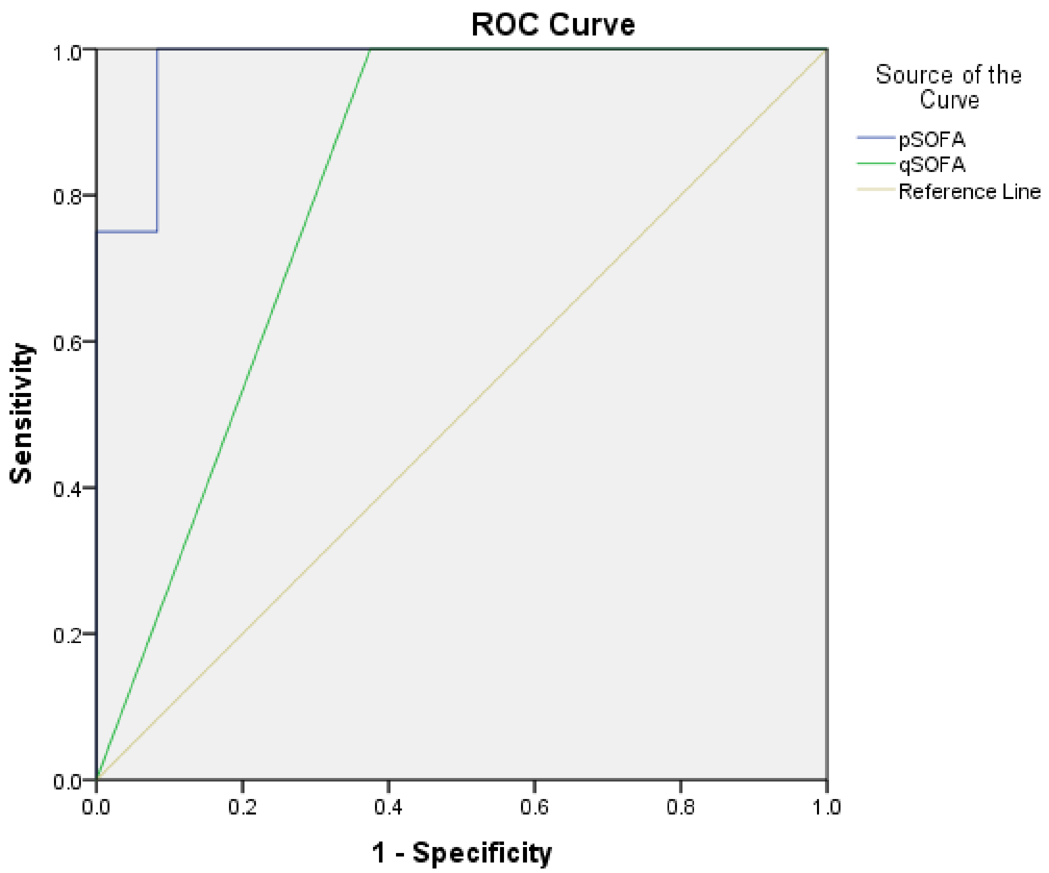

Figure 1: Comparison of the Receiver Operating Characteristic (ROC) curves of pSOFA and qSOFA scores to predict hospital mortality

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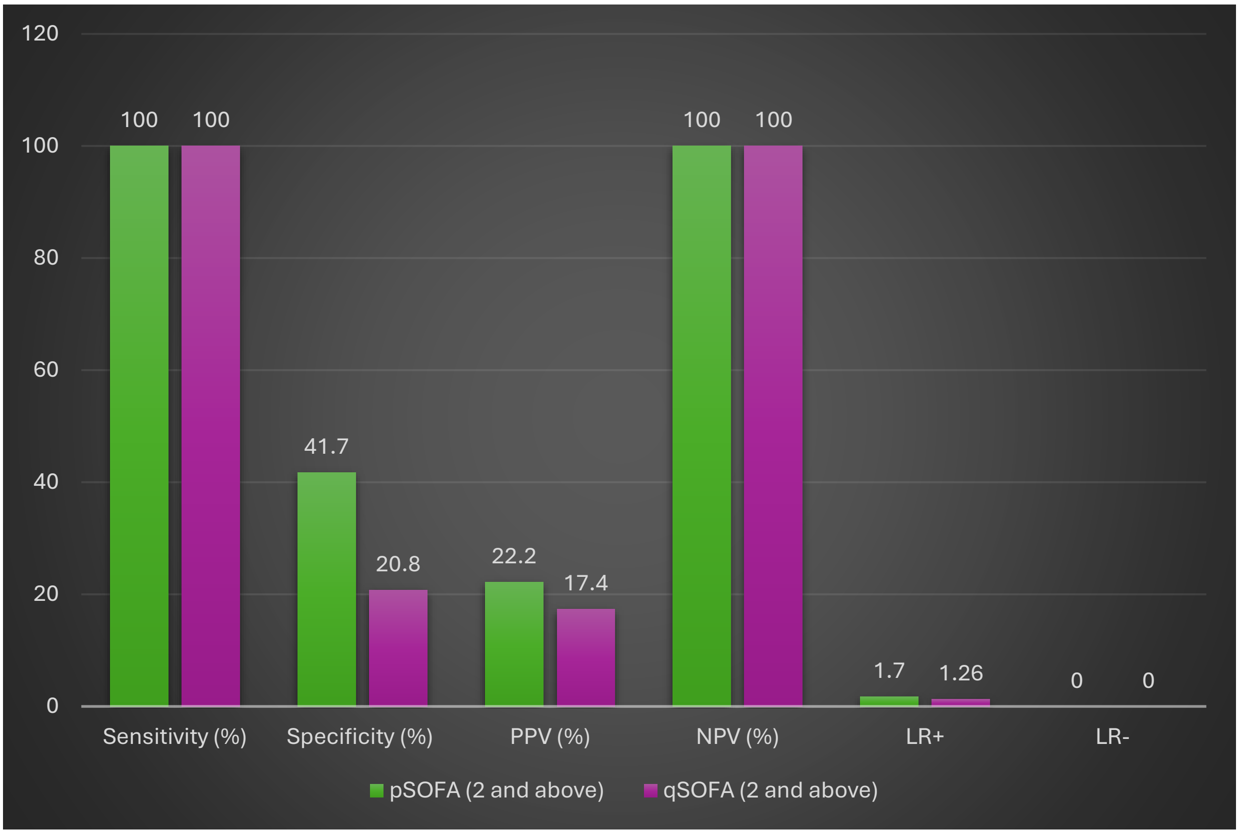

Figure 2: Performance of pSOFA and qSOFA in predicting mortality