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Evaluation of Acute Physiology and Chronic Health Evaluation Ii Score, Sequential Organ Failure Assessment Score in Sepsis with Mods

KEYWORDS

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INTRODUCTION

Sepsis is the leading cause of death among critically ill patients. The mortality rates increase with severity of the disease, ranging from 15% for sepsis to 60% for septic shock. Early recognition of a sepsis patient followed with timely and appropriate treatment and management strategies have been shown to significantly reduce sepsis related mortality, and allows care to be provided at lower costs.

Epidemiology of sepsis in India:

India, with population of 1.2 billion, has one of the highest infectious disease burdens in the world. While systemic data on presentations of acute febrile illness are lacking, 12% of adults (range 1–51%) of those presenting with acute febrile illness will have bacteremia**.**

AIMS & OBJECTIVES

1. To assess morbidity and mortality of patients with multi organ Dysfunction syndrome in sepsis.
2. To prognosticate the patients by using defined scores like SOFA and APACHE II scores**.**

PATIENTS AND METHODOLOGY

A prospective study entitled **"**EVALUATION OF ACUTE PHYSIOLOGY AND CHRONIC HEALTH EVALUATION II SCORE, SEQUENTIAL ORGAN FAILURE ASSESSMENT SCORE IN SEPSIS WITH MODS**"**was undertaken at GANDHI HOSPITAL,SECUNDERABAD after the approval from Ethics Committee. The study was carried out in the period of FEBRUARY 2014 to SEPTEMBER 2015 and 50 patients were included in the study.

INCLUSION CRITERIA

- Patients above 18 years of age.
- Patients with evidence of sepsis and MODS on admission.

EXCLUSION CRITERIA

Patients who is on treatment with immunosuppressive agents.

Patients with retroviral infection.

RESULTS AND DISCUSSION

Sepsis with multiorgan dysfunction syndrome (MODS) is a common cause of Intensive Care Unit (ICU) mortality and morbidity. Sepsis can be reversed, but as sepsis progresses to severe sepsis and septic shock the mortality rate substantially increases. Multiorgan dysfunction syndrome is well established as the final stage of the continuum. Due to the high mortality associated with sepsis and its complications it is necessary to rapidly diagnose and treat the underlying cause. Scoring systems for use in the intensive care unit (ICU) have been developed from the past 30 years. They are widely used in the field of critical care medicine. They allow a quantification of the severity of illness and a probability of in hospital mortality. A well performing ICU prognostic model helps to make meaningful comparison of the hospital's current performance with the past. This allows the hospital to identify the weakness and initiate interventions aimed at quality improvement and allow patients to choose health care providers based on performance. The use of these prognostic models help in providing meaningful information to physicians when discussing patient prognosis with the patient's relatives. Our study focused on Acute Physiology and Chronic Health Evaluation II (APACHE II) and Sequential organ failure assessment (SOFA) scores. The

objectives of our study were to assess morbidity and mortality of patients with multiorgan dysfunction syndrome in sepsis and to prognosticate the patients by using defined scores like SOFA and APACHE II scores**.** All the patients of sepsis admitted to ICU/emergency ward were prognosticated on the basis of APACHE II score and SOFA score. APACHE II is calculated on day of admission. The predicted mortality rate was calculated on the basis of this score. To assess sequential involvement of organ we calculated SOFA score on every day. This gave us idea whether involvement of number of organ was increasing or decreasing and if the severity of particular organ was increasing. We have analyzed various profiles between two

groups, survivor group which include the patients who are successfully discharged after recovery and non-survivor group which include the patients who died. There were 28 males and 22 females in this cohort. The age of patients varied from 19 years to 81 years. The mean age was 47.36 years. In this study, 21 patients died and 29 patients survived. The respiratory rate was high in survivors than non survivors (30.38 v/s 29.95)which was not statistically significant (p=0.756).the mean GCS among survivors was high compared to non survivors on all days (day1, 14.19 v/s 10.19) and was statistically very significant (p<0.001). In our study, though mean APACHE II score was high among non survivors than survivors (22.67 v/s 17.24).The SOFA score on day 1 was high among non survivors and survivors which was statistically significant (10.43 v/s 7.97, p=0.003). However, the most significant difference was observed on day 3. The SOFA score was very high among non survivors as compared to survivors which was statistically very significant (13.44 v/s 6.59, p<0.0001).

Serial measurement of SOFA score during first week is very

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useful tool in predicting the outcome. The trend of SOFA score was progressively declining in survivors while non-survivors had stable higher score during the first week. The APACHE II score on day of admission, though reliable, is not very effective in predicting the mortality rate. Once the

organ failure sets in, even the most aggressive and expert critical care may be not enough. Thus to conclude, sepsis is a very fatal disease with a high mortality rates for MODS.

LIMITATIONS OF THE STUDY

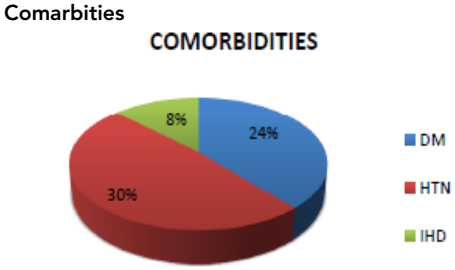
With a sample size of 50 patients this model requires external validation.

1. The time of admission to ICU for each patient is different. Lead time bias is possible.
2. Nosocomial complications and socio economic constraints are difficult to model in studies.
3. History of prior antibiotic usage could not be ascertained by history.

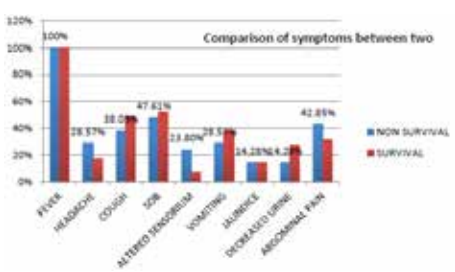
CONCLUSION

1. Serial measurement of SOFA score during first week is very useful tool in predicting the outcome. The trend of SOFA score was progressively declining in survivors while non survivors had stable higher score during the first week.
2. The APACHE II score on day of admission, though reliable, was not very effective in predicting the mortality rate

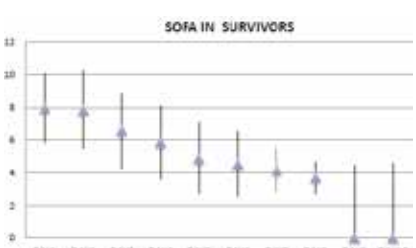
Comarbities



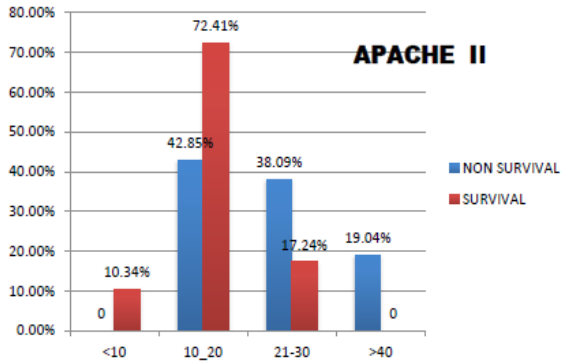
Comparison of symptoms between two groups



SOFA score survivors



APACHE II in two groups



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