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Paediatrics

DAILY DENGUE SEVERITY SCORE – IMPLICATIONS, BENEFITS AND LIMITATIONS IN OUR SETTING

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ABSTRACT **Introduction-** Dengue is associated with high morbidity & at times develops potentially fatal complication. Predicting the outcome on the basis of clinical presentation alone is less reliable and complicated owing to variable symptomatology. there is a need for developing and testing a scoring system, for the detection of complicated and severe dengue fever early in the course of infection, to identify those children who may progress to DSS/DHF and succumb to disease subsequently & to triage sick patients for early referral from primary and community health centers to higher center for intensive care management. **Material & methods-** This Prospective observational study was conducted in Department of Pediatrics, SMS Medical College, Jaipur during January 2020 to September 2021. Sample size is calculated at 95 % confidence interval expecting sensitivity of 86% using dengue severity score of more than equal to 12 in the assessment of outcome of dengue severity among the dengue fever patients. An absolute allowable error of 15% and at prevalence of 17.4% of severe dengue patients, the required sample size was 125 cases with dengue fever. Statistical analyses were done using computer software (SPSS Trial version 23 and primer). **Results-** if we use the critical cut off of DDSS >10.5 on day 1 of hospital admission; it was a strong predictor of mortality with p <0.001 and area under curve was 0.906 which is near 1. The sensitivity of score at this cutoff was 100% and specificity was 71.7%. The cutoff was chosen as 10.5 because at this cut off both sensitivity and specificity were reasonably high and below this score although sensitivity remains 100% but specificity decreases i.e., false positive cases would increase and if cutoff is increased then specificity increases but sensitivity decreases i.e., false negative increases. If cutoff was chosen at 16.5 sensitivity of score decreases to 83.3% but specificity increases to 85%. On cutoff of 22 sensitivity decreases to 50% and specificity increases to 90.3%. **Conclusions-** If critical cutoff more than 10.5 is used, dengue shock syndrome can be predicted with specificity of 82.5% and sensitivity of 94.6%. If critical cutoff of more than 8.5 is used, prolonged length of hospital stay can be predicted with sensitivity and specificity of 51.9% and 53.1% respectively. If critical cutoff of more than 11.5 is used then organ dysfunction in dengue patients can be predicted with sensitivity of 78.9% and specificity of 89.7% respectively. If critical cutoff of more than 10.5 is used then mortality in dengue patients can be predicted with sensitivity 100% of and specificity of 71.7%.

KEYWORDS : Daily Dengue Severity Score, Mortality, DHF, Dengue fever

INTRODUCTION

Dengue, a common mosquito-borne disease of public health importance affects about 1% of the world's population annually; is associated with high morbidity & at times develops potentially fatal complication. In 2012, it was ranked as fastest spreading vector borne viral disease in the world. [1,2].

Clinical manifestations of dengue range from asymptomatic to dengue fever (DF), dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS). Among the three stages of DHF i.e., febrile, toxic and defervescence stage; the toxic stage is the most critical period in which plasma leakage leads to DSS, requiring intensive care and optimal fluid therapy to sustain the functions of vital organs. Severe dengue has a mortality of 2% -5% & as high as 20% in resource poor settings [2,3].

Predicting the outcome on the basis of clinical presentation alone is less reliable and complicated owing to variable symptomatology & different factors influencing the pathogenesis and course of disease. Incidences of sudden mortality necessitate early identification of severe illness. Thus, there is a need for developing and testing a scoring system, for the detection of complicated and severe dengue fever early in the course of infection, to identify those children who may progress to DSS/DHF and succumb to disease subsequently & to triage sick patients for early referral from primary and community health centers to higher center for intensive care management.

Daily dengue severity score (DDSS) was developed by Tangnararatratchakit et al in 2004 to 2018 [4]. Using validity test, Dengue severity score more than equal to 12 was found as a useful assessment tool for the severe manifestations of dengue fever with sensitivity of 86.2% and specificity of 84.3% [4,5]. Daily dengue severity score includes underlying risk factors of the patients individually such as age ≤1 year, aspirin or non-steroidal drug ingestion, underlying disease such as hemolytic anemia and congenital heart disease [6]. It also includes vital signs such as urine output, bleeding sites, amount of the required crystalloid, colloid and blood components, inotropic drug administration, respiratory support and invasive procedures [7].

Daily dengue severity score was proposed to predict shock, organ dysfunction, prolonged length of hospital stay and mortality in dengue patients. The advantage of Daily dengue severity scoring is that it can be performed in settings with limited medical resources manually on a predesigned proforma. It is easy to use, cost effective and time saving. The score serves as a monitoring tool to predict the complications. But in the scoring system used by Tanganararatratchakit , only critical cutoff to predict shock was given.

This study is aimed to assess the sensitivity and specificity of the Daily Dengue Severity score, to assess optimal cut off value of score for severe dengue using ROC (Receiver Operating Characteristic) Curve in terms of the outcomes of dengue fever like dengue shock syndrome or any other complications, recovery or discharge; days of recovery & mortality by using daily dengue severity score.

The present study will help for identifying patients of dengue fever progressing to dengue shock syndrome at an earlier stage thus preventing morbidity and mortality associated with dengue fever by providing insight for early intervention and for early referral to higher center. Only few studies have been done on dengue severity score in developing country like India where burden of disease is high.

MATERIALS AND METHODS-

This Prospective observational study was conducted in Department of Pediatrics, SMS Medical College, Jaipur during January 2020 to September 2021. All patients admitted with dengue fever in J.K. Lon Hospital SMS Medical College, Jaipur were included in the study after informed written consent. Children of age group 1 month to 18 years, with dengue fever confirmed by using NS1 antigen and IgM/IgG Immunoassays admitted in ward and ICU were included. Cases presented to the hospital with influenza like symptoms with only NS1/IgG Immunoassay positive were excluded.

Sample size is calculated at 95 % confidence interval expecting sensitivity of 86% using dengue severity score of more than equal to 12 in the assessment of outcome of dengue severity among the dengue fever patients. An absolute allowable error of 15% and at prevalence of 17.4% of severe dengue patients, the required sample size was 125 cases with dengue fever. Statistical analyses were done using computer software (SPSS Trial version 23 and primer). The qualitative data were expressed in proportion and percentages and the quantitative data were expressed as mean and standard deviations. The difference in proportion was analyzed by using chi square test and the difference in means among the groups was analyzed using the student T Test for parametric data and Mann-Whitney U test for the non-parametric. The test of normality was done by Kolmogorov-Smirnov test and skewness and kurtosis statistics. Receiver operating characteristic (ROC) curve analysis was performed to determine the optimal cutoff values of significant variables. Significance level for tests was determined as 95% (P< 0.05).

RESULTS -

In this study, Daily Dengue Severity Score; comprised of 16 clinical parameters was studied to predict severity of disease. Total 125 patients were studied. Mean age of the study participants was 8.07 ± 4.33 years with a median of 8 (0.08 – 16) years. Out of 125 cases, there were 6 (4.8%) cases in <1year age group, 32(25.6%) cases in 2-5 years age group, 47 (37.6%) cases in 6-10 years age group, 40(32%) in 11-16 years age group. 6-10 years age group was the major group. Male to female ratio was 1.1:1, with 68 (54.4%) male and 57 (45.6%) female children. Out of 125 cases; 13 children had co-morbidities. 1 case (0.8%) had obesity, 4 (3.2%) cases had failure to thrive, 3(2.4%) cases were undernourished, 1(0.8%) patient was taking oral steroids, 2(1.6%) cases had tuberculosis meningitis, 2(1.6%) cases had thalassemia. There was no mortality noticed because of obesity, use of prior steroids or other comorbidities in the study. Comparison of mean Dengue severity score in relation to underlying disease suggested that mean score on day 1 of patients with underlying morbidity was 29.12(±28.8) which was higher than patients without co-morbidity [10.1(±14.39)]. [p- value =0.001] Out of 125 patients 38 patients (30.4%) had organ dysfunction. 21 (16.8%) had liver dysfunction, 17(13.6%) had ARDS, 11(8.8%) had encephalitis, 6(4.8%) had renal dysfunction and 4(3.2%) had bone marrow involvement. Out of 125 patients, 12(9.6%) patients died and 113(90.4%) cases survived.

Mean Daily Dengue severity score & development of Dengue shock syndrome- we found statistically significant association between dengue shock syndrome & mean score 31.07 (23) on day 1 of hospitalization. While children having DDSS 41.32(21.35) on day 2, 45.75(25) on day 3, 17.83 (25.44) on day 4 developed dengue shock syndrome; showing that higher value of score correlates with poor outcome with statistically significant association. Spike in DDSS was noticed on day 3 with score of 45 and day 7 with score of 40 (figure-1). Lowest score (20) was noticed on day 4. Patients with score of 5 or less didn't progress to dengue shock syndrome (Table 1).

Mean Daily Dengue severity score & survival outcome- we found statistically significant association(p-0.001) between mean DDSS of 30.42(16.81) on day 1 & non survival and DDSS of 9.29 (14.81) & recovery. On day 2; DDSS of 51.37(11.47) was associated with mortality while DDSS of 7.22(13.76) with recovery which was statistically significant (p<0.001). On day 3, patients with score 52.14(13.98) have expired and with score 6.30 (14.33) recovered. Score of 54 and 44 on day 4 and 5 have resulted in mortality while with scores of 3.8(7.49) and 4.5(8.6) have recovered with p<0.001. Score of more than 50 was associated with mortality while less 10 with recovery. Patients who had worse outcome had mean score as high as 30.42±16.87 since day 1 which peaked up to 54±0 on day 4 of admission as compared to group of patients with better outcome having mean score of 9.29±14.81 on day 1 which decreased later (Table 2, Figure 2).

ROC Curve Analysis of Dengue severity score on Day 1 for predicting dengue shock syndrome- Group of patients who developed DSS, had mean scores as high as 31.07±23.28 on day 1 which peaked up to 45.75±25.49 on day 3; while patients who had no shock had scores <5 since day 1. ROC analysis suggested that Daily Dengue Severity score has maximum sensitivity of 96.4% and specificity of 82.5% at critical value of >10.5 in predicting shock which is statistically significant (p=0.001). AUC was 0.952 which shows that daily dengue severity score is a good predictor of shock (Table 3 and figure 3).

Analysis of ROC Curve for Dengue severity score on Days 1 for predicting mortalityROC analysis suggested that Daily Dengue Severity score of > 10.5 has sensitivity of 100% and specificity of 71.7% at critical cutoff of>10.5 for predicting mortality in dengue patients (p value = <0.001). The AUC is 0.906 which shows that Dengue Severity Score is a good predictor of mortality. If critical cut off of Daily Dengue Severity Score was kept >10.5 on day 1 of hospital admission, it was found to be a strong predictor of mortality (p<0.001) with sensitivity of 100%, specificity of 71.7% and AUC of 0.906(0.845-0.967). If the critical cutoff was taken on higher side, then specificity increased but sensitivity decreased and vice versa (Table 4, figure 4).

Analysis of ROC Curve for Dengue severity score on Day 1 for predicting organ dysfunction- ROC analysis suggested that Daily Dengue Severity Score has sensitivity of 78.9% and specificity of 89.7% at critical cutoff of >11.5 for predicting organ dysfunction in dengue patients. The AUC is 0.887 showing that Daily Dengue Severity Score is a good predictor of organ dysfunction (Table 5, and Figure 5).

Outcome in relation to organ dysfunction and Type of organ dysfunction among patients who died- Out of 125, 38 patients had organ dysfunction. Out of 38, 12(31.6%) patients died; while there were no expiries in children having no organ dysfunction. We found Chi-square = 26.861 with 1 degree of freedom and p- value < 0.001 between organ dysfunction and mortality. Most common cause of death was hepatitis in 4 (33.3%) cases followed by ARDS in 2 (16.7%), AKI in 2 (16.7%) cases and MODS in 4 (33.3%) cases. We found statistically significant correlation between hepatitis and mortality (p-0.003).

Analysis of ROC Curve for Dengue severity score for predicting duration of hospital stay- Patients with mean score >8.5 (p=0.661) had longer length of stay in hospital then patients with lower score. Sensitivity and specificity of this cutoff is 51.9% and 53.1% respectively. There was no significant difference found in mean duration of hospital stay in patients with shock and without shock. The mean duration of stay was 2.68±1.47days in patients with shock while in patients without Dengue severity score was 2.65±1.71 days. ROC analysis suggested that Daily Dengue Severity Score of >8.5 with sensitivity of 51.9% and specificity of 53.1% had prolonged hospital stay. However, the correlation is not significant (p=0.661). The AUC is 0.472 showing that Daily Dengue Severity Score is not a good predictor for prolonged hospital stay (Table 6, Figure 6).

DISCUSSION- In our study, mean age of the children was 8.07(±4.33) years, which was similar to other studies [8,9,10,11]**.** Out of 125 children, 68 (54.4%) were males and 57 (45.6%) were female, with M:F ratio of 1.1:1. Similar findings were observed in other studies [12,13,14]. Out of 125, 3.2% cases were below 1 year of age. The mean score on day 1 of infants was noticed to be high (29.12±28.8) as compared to others (10.1±14.39). We observed statistically significant association (p value-0.001) between age less than 1 year and DDSS. Other studies also concluded that dengue fever in infants represent 5% of children admitted in south east Asian countries and 33% of these cases land up in severe dengue [15,16].

In our study, we noted 9.6% mortality, out of 125 children. In group of patients who have expired due to severe dengue, the mean dengue severity score on day 1 was 30.42±16.87, while score on day 2 was 51.37±11.47 and highest scores (54) were noticed on day 4; suggesting that patients who had worse outcome had high score since day 1 (p<0.001). children with better prognosis had score of 9.29±14.81 on day 1 which subsequently decreased on day 2 (7.22±13.76), day 3 (7.22) & on day 4 (6.30).

Similar findings were noted in other studies [17,18,19]. The high mortality rate in our study may be due to our center being a tertiary care hospital where more critical cases are referred.

We concluded that if we use the critical cut off of DDSS >10.5 on day 1 of hospital admission; it was a strong predictor of mortality with p <0.001 and area under curve was 0.906 which is near 1. The sensitivity of score at this cutoff was 100% and specificity was 71.7%. The cutoff was chosen as 10.5 because at this cut off both sensitivity and specificity were reasonably high and below this score although sensitivity remains 100% but specificity decreases i.e., false positive

cases would increase and if cutoff is increased then specificity increases but sensitivity decreases i.e., false negative increases. If cutoff was chosen at 16.5 sensitivity of score decreases to 83.3% but specificity increases to 85%. On cutoff of 22 sensitivity decreases to 50% and specificity increases to 90.3%. In a study done by Sachdev et al, PRISM score >14.5, VIS score >22.5, positive fluid balance>10%, hyperlactatemia are predictors for mortality [20]. In study done by Mallaya et al, 200 patients were studied based on clinical scores and PLUTO scoring system, score of 4 or 5 out of maximum score 5 had poor prognosis and longer hospital stay. Score had sensitivity of 73% and specificity of 50% [21].

In our study, it was found that patients with score more than 8.5 (p=0.661) had longer length of stay in hospital then patients with lower score. Mean duration of hospital stay in patients with DSS was 2.68±1.47 days, while in patients without DSS was 2.65±1.71 days with p <0.001 which shows that there was no significant difference between patients with shock and without shock (table 26). Area under curve was 0.661 which was not near 1, showing that this score has to be used in more cohorts for better validation. Cutoff was taken to be 8.5 because below this cutoff sensitivity increases but specificity decreases i.e., false positive increases and below this cut off specificity increases but sensitivity decreases i.e., false negative increases. Similar findings were noted in other studies [22,23,24].

In our study, 30.4% had organ dysfunction in which hepatic involvement was most common i.e., 16.8%. If critical cutoff of Daily Dengue Severity Score >11.5 (p=0.001) is used then it proves to be a strong predictor of organ dysfunction with area under curve 0.887 (0.8870.950). The sensitivity of score at this cutoff was 78.9% and specificity was 89.7%. Critical cutoff of 11.5 was chosen because below this cutoff sensitivity increases but specificity decreases i.e., false positive increases and if cutoff is increased then sensitivity decreases and specificity increases i.e., false negative increases. If cutoff is taken at 10.5 then sensitivity increases to 81.6% but specificity decreases to 85.1%. If cutoff is taken at 13 then sensitivity decreases at 71% but specificity increases to 90.8%. 31.6% patients with organ dysfunction expired and most common organ involvement among expired patients was liver causing 33.3% death (p=0.05).

Study by Sachdev et al concluded that AKI and MODS were present in 80% and 100% non-survivors. 69.2% cases had >2 organ dysfunction commonest being respiratory and cardiovascular [20]. Our results might vary because the later study included exclusively the patients admitted in PICU. Study done by Bunchoo Pongtanakul et al in Thailand concluded that out of 20 patients with Thalassemia 10% patients had serious complications, which mostly occur due to hemolysis more than hemoconcentration in dengue patients [15]. Study done by Lola Purnama et al using PLEOD score concluded that liver dysfunction was observed in 53.3% patients who expired and hematologic dysfunction was noticed in 60% patients who died. Similarly, it was found in our study that hepatic injury was most common cause of mortality in DSS [25].

In group of patients who developed dengue shock syndrome on day 1, mean score was 31.07±23.28 with p<0.001 showing that it was significant and on day 2 patients with dengue had score of 41.32±21.35 (p<0.001) and highest peak of score was noted on day 3 with score of 45.75±25.49 (p<0.001). Nadir of score was noted on day 4with score 17.83±25.44(p <0.001). Another peak is noted on day 7 with score of 39±0(p<0.001). In second group of patients who never developed shock; score was always ≤5 till day of discharge and had better prognosis. In the study, if critical cutoff>10.5 (p=0.001) is used then it is shown to have reasonably high sensitivity of 94.6% and specificity of 82.5%. It was found to be useful to predict shock in dengue patients as the area under curve is 0.906 (0.845-0.967).

Study done by Tangnararatchakit et al in 191 patients concluded that daily dengue severity score in patients with DHF grades 3 and 4 was significantly higher than that of dengue grades 1 and 2 with p=0.0001. Also, it was concluded that, a total daily score of>12 was an assessment tool for shock with sensitivity of 86% and specificity 84%[4]. In our study, critical cutoff was >10.5 with higher sensitivity and similar specificity. 10.5 was chosen as critical cutoff because below this cutoff sensitivity increases but specificity decreases i.e., false positive increases and if cut off is taken at higher point then specificity increases but sensitivity decreases i.e., falser negative are detected. If cut off was decreased to 8.5 the sensitivity increased to 100% but specificity decreased to 74.2%, while if the cut off was increased to 16.5% specificity increased to 94.8% but sensitivity decreased to 78.6%.

Similar studies done in Mumbai in 2003 by Ira Shah et al concluded that significant predictors of shock in dengue were younger age of onset-3.5years (p=0.0284), altered sensorium, paralytic ileus (p=0.008), and severe derangement in form of component therapy (deranged PT and APTT p=0.02) or ionotropic support(p=0.01) [26].

SUMMARY-

Mortality due to dengue was 9.6%. 30.4% cases had organ dysfunction. Most common organ involved was liver. Daily dengue severity score of >11.5 is a strong predictor of organ dysfunction with sensitivity and specificity of 78.9% and 89.7% respectively. The AUC for predicting organ dysfunction was 0.887(0.823-0.950) showing that daily dengue severity score is a good predictor of the same). If the critical cutoff was taken on higher side, then specificity increased but sensitivity decreased and if taken on lower side then sensitivity increased but specificity decreased. Most common organ dysfunction in patients who expired was liver accounting for 33.3% death. If critical cutoff of >10.5 (p=0.001) was used then it had sensitivity of 94.6% and specificity of 82.5% to predict shock in dengue patients. The AUC to predict shock using this score was 0.952(0.917-0.986) showing that the test is a good predictor of shock. If the critical cutoff was taken on higher side, then specificity increased but sensitivity decreased and if taken on lower side then sensitivity increased but specificity decreased.

CONCLUSION -

If critical cutoff more than 10.5% of is used then dengue shock syndrome can be predicted with specificity of 82.5% and sensitivity of 94.6%. If critical cutoff of more than 8.5 is used then prolonged length of hospital stay can be predicted with sensitivity and specificity of 51.9% and 53.1% respectively. If critical cutoff of more than 11.5 is used then organ dysfunction in dengue patients can be predicted with sensitivity of 78.9% and specificity of 89.7% respectively. If critical cutoff of more than 10.5 is used then mortality in dengue patients can be predicted with sensitivity100% of and specificity of 71.7%.

STRENGTHS-

Daily Dengue Severity score is useful in predicting early mortality, organ dysfunction, hence patients with high score on admission can be referred to higher center for better management where critical care is available.

LIMITATIONS -

This study was done in 125 patients hence before using the score in clinical setting, they should be studied on larger cohort. Our center is a tertiary care center where most of the children are referred cases. The setting, geographic and socioeconomic variations are limitations of our study.

FUTURE RECOMMENDATION- This score can be used in wider scale of population at Primary health center and Community health center to approve validity.

Table 1: Comparison of mean Dengue severity score in relation to Dengue shock syndrome

Day	Dengue shock syndrome – yes	Dengue shock syndrome - no	P value
Day 1	31.07 ± 23.28	5.52 ± 6.31	<0.001
Day 2	41.32 ± 21.35	3.43 ± 4.75	<0.001
Day 3	45.75 ± 25.49	2.70 ± 4.19	<0.001
Day 4	17.83 ± 25.44	3.04 ± 4.34	<0.001
Day 5	21.25 ± 22.97	3.05 ± 4.68	0.003
Day 6	33.33 ± 29.14	3.40 ± 4.48	0.005
Day 7	39 ± 0	1.75 ± 4.95	<0.001
Day 8	-	3.67 ± 6.35	-

Table 2: Mean Dengue severity score & survival outcome

Day	Death	Recovered	P value
Day 1	30.42 ± 16.87	9.29 ± 14.81	<0.001
Day 2	51.37 ± 11.47	7.22 ± 13.76	<0.001
Day 3	52.14 ± 13.98	6.30 ± 14.33	<0.001
Day 4	54 ± 0	3.80 ± 7.49	<0.001

Day 5	44 ± 0	4.50 ± 8.67	<0.001
Day 6	54 ± 0	6.67 ± 13.07	0.005
Day 7	-	5.89 ± 13.25	-
Day 8	-	3.67 ± 6.35	-

Figure 1

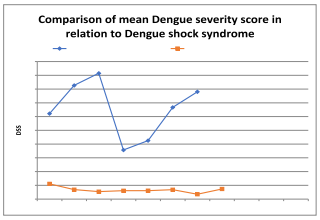
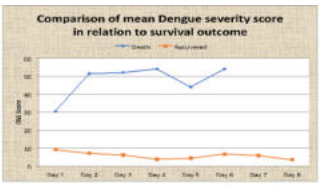


Figure 2



Diagnostic parameters of Dengue severity score on day 1 for predicting Dengue shock syndrome

Figure 3: ROC Curve for Dengue severity score on Day 1 for predicting dengue shock syndrome

AUC (95% CI)	0.952 (0.917 – 0986)
P value	<0.001 (S)
Critical cut-off	>10.5

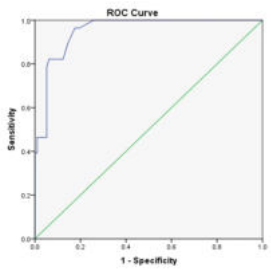


Figure 3: ROC Curve for Dengue severity score on Day 1 for predicting dengue shock syndrome

Table 3: Diagnostic parameters of Dengue severity score on day 1 for predicting Dengue shock syndrome

Parameter	Value
Sensitivity	96.4%
Specificity	82.5%
PPV	61.3%
NPV	98.8
Diagnostic accuracy	85.6%

Figure 4: ROC Curve for Dengue severity score on Days 1 for predicting mortality

AUC (95% CI)	0.906 (0.845 – 0967)
P value	<0.001 (S)
Critical cutoff	>10.5

Figure 4

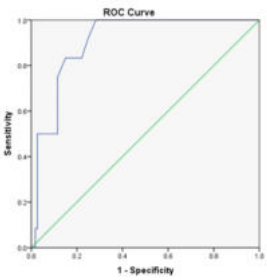


Figure 4- ROC Curve for Dengue severity score on Days 1 for predicting mortality

Table 4: Diagnostic parameters of dengue severity score on day 1 for predicting mortality

Parameter	Value
Sensitivity	100%
Specificity	71.7%
PPV	27.3%
NPV	100%
Diagnostic accuracy	74.4%

Figure 5: ROC Curve for Dengue severity score on Day 1 for predicting organ dysfunction

AUC (95% CI)	0.887 (0.823 – 0.950)
P value	<0.001 (S)
Critical cutoff	>11.5

FIGURE 5

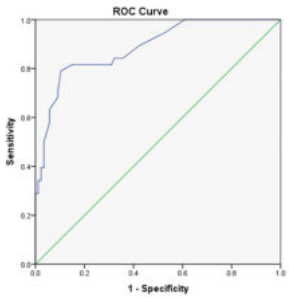


FIGURE 5- ROC Curve for Dengue severity score on Day 1 for predicting organ dysfunction

Table 5: Diagnostic parameters of Dengue severity score on day 1 for predicting organ dysfunction

Parameter	Value
Sensitivity	78.9%
Specificity	89.7%
PPV	70.5%
NPV	85.1%
Diagnostic accuracy	84%

Figure 6: ROC Curve for Dengue severity score for predicting duration of hospital stay

AUC (95% CI)	0.472 (0.357 – 0.588)
P value	0.661 (NS)
Critical cutoff	>8.5

Figure 6

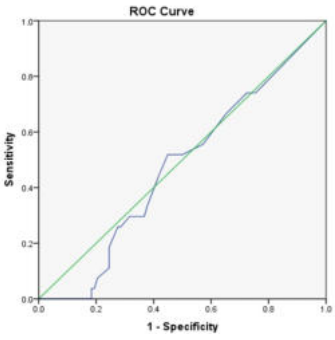


Figure 6- ROC Curve for Dengue severity score for predicting duration of hospital stay

Diagnostic parameters of dengue severity score on day 1 for predicting duration of hospital stay

Table 6: Diagnostic parameters of dengue severity score on day 1 for predicting duration of hospital stay

Parameter	Value
Sensitivity	51.9%
Specificity	53.1%
PPV	24.1%
NPV	80.5%
Diagnostic accuracy	54.4%

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