Comparison of WSES Prognostic Score and Mannheim Peritonitis Index in Predicting Outcome of Patients with Peritonitis Secondary to Hollow Viscus Perforation.

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Abstract: *Perforative peritonitis is one of the most common surgical emergencies encountered in tropical countries like India and associated with significant morbidity and mortality rates. Despite development in diagnosis and management the prognosis of peritonitis remains poor. Different scorings are used to predict the outcome in patients with peritonitis. Here, we assessed the utility of such scoring systems that is, Mannheim peritonitis index (MPI) scoring and WSES prognostic score in predicting the outcome of patients with perforation peritonitis. A prospective non randomized comparative study was conducted in Government Rajaji Hospital, Madurai on Patients who were diagnosed with peritonitis secondary to hollow viscus perforation who are willing for definitive surgery. Both WSES prognostic score and Mannheim peritonitis index were calculated on all patients and outcome and various other indices noted. From the study various observations noted like Mortality rates which are directly proportional to severity of both scoring systems. There is a significant difference in predicting mortality between both scoring systems. MPI is better scoring system to predict mortality. Both scores are similar in predicting SSIs. MPI scoring is more specific in predicting the return of bowel functions whereas sensitivity is not accurate in both scoring systems.Mannheim Peritonitis Index is better than WSES Prognostic score in predicting outcome of patients diagnosed with peritonitis secondary to hollow viscus perforation and more elaborative study is essential.*
Keywords: peritonitis, WSES score, Mannheim index

I. Introduction

Perforative peritonitis is one of the most common surgical emergencies encountered in tropical countries like India and associated with significant morbidity and mortality rates. Despite development in diagnosis and management the prognosis of peritonitis remains poor. Different scorings are used to predict the outcome in patients with peritonitis. Scoring systems providing objective descriptions of patient's conditions at specific points in the disease aid for better understanding of these problems. This is important in determining the course; the disease is taking in a particular patient, whether the line of management taken is appropriate or need to be changed. Proper clinical monitoring with optimum number of investigations remain the corner stone of emergency surgery for peritonitis and also for the better use of above methods.These scoring systems can be a good tool to predict and hence to monitor the priority of treatment for better care in case of peritonitis. Here, we assessed the utility of such scoring systems that is, Mannheim peritonitis index (MPI) scoring and WSES prognostic score in predicting the outcome of patients with perforation peritonitis.

Study design

It is a prospective non randomized comparative study. The study was conducted in Government Rajaji Hospital, Madurai on Patients who were diagnosed with peritonitis secondary to hollow viscus perforation who are willing for definitive surgery. Data regarding history, clinical examination, laboratory values & postoperative analysis were collected. Various parameters were assessed and scoring hence done. The results of both scoring systems were compared and the accuracy of each system determined.

II. Results and Discussion

In our study we included 50 patients. Age distribution of the patients affected ranged from 13-70 years in the present study. The maximum number of cases 20(34.92%) studied were in the age group of 41 to 60.Mortality rates are directly proportional to age of the patients .Overall mortality is 16% Patients >60 years suffered 71% mortality.62% of patients presented by 2-3 days from onset of pain. One patient died pre

operatively during resuscitation, 6 patients died within one week of postop period, and one patient died on 20th Postop day.8% of study population were females. Among females 50% died postoperatively. In our study 22 out of 50 (44%) patients developed wound infections / gaping. Both scores are similar in predicting SSIs, high severity groups in WSES score and MPI had 43% and 44% patients with postop wound infections / gaping respectively. In 32 out of 50 (64%) patients bowel functions returned after 3 days. In WSES Scoring system 66% of patients in low severe group, 12.5% of patients in high severity group had early return of bowel functions. In MPI Scoring system 55% patients of low severity group and none of the high severity group patients had early return of bowel functions. MPI scoring is more specific in predicting the return of bowel functions whereas sensitivity is not accurate in both scoring systems. In our study 25(50%) patients required post op ventilation. In MPI high severity group 7 out of 9 (77%) patients required postop ventilation, in low severity group 9 out of 27 (33%) patients required postop ventilation. In WSES scoring system 12 out of 16 (75%) patients in high severity group required postop ventilation, in low severity group 4 out of 9 (44%) patients in low severity group required postop ventilation.

WSES PROG.SCORE
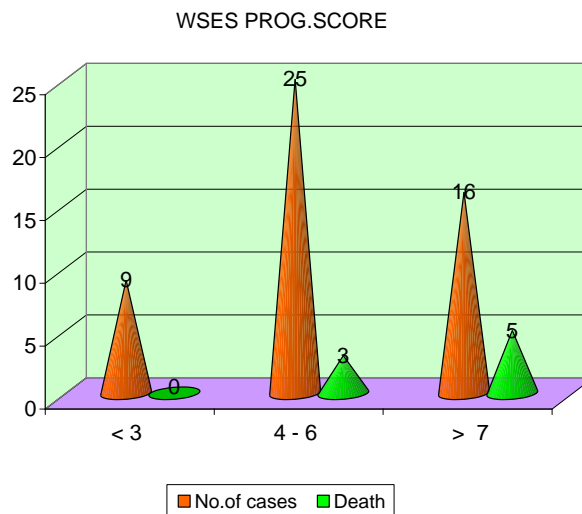
Thus MPI scoring system is better in predicting requirement of postop ventilation.In our study 14 (28%) patients required hospital stay of more than 10 days. In MPI high severity group 3 out of 9 (33%) patients , in low severity group 7 out of 27 (25.9%) patients required hospital stay of >10 days. In WSES scoring system 3 out of 16 (18%) patients in high severity group required hospital stay of >10 days, in low severity group 2 out of 9 (22%) patients in low severity group required hospital stay of >10 days. Neither of the scoring systems predicted prolonged hospital stay accurately as low and high severity groups in same systems had varying results. This fallacy is attributed to the fact that duration of stay is multifactorial – SSI, Respiratory tract infections etc. which were not included for comparison.

MANHEIM PERITONITIS SCORE
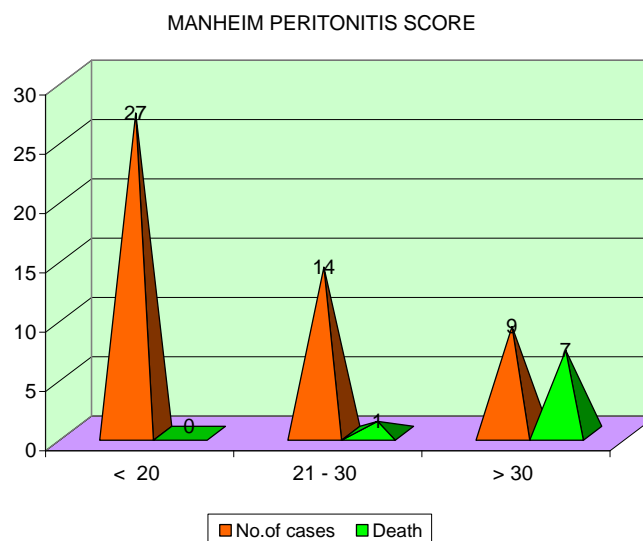
No study analyzed the efficacy of either scoring systems in predicting other morbidity indicators such as SSIs,return of bowel sounds, duration of postop ventilator support, duration of hospital stay.

III. Conclusion

Sex is a major mortality indicator as far this disease is concerned,and it is correctly included in MPI scoring system.Mortality rates are directly proportional to severity of both scoring systems. There is a significant difference in predicting mortality between both scoring systems. MPI is better scoring system to predict mortality. Both scores are similar in predicting SSIs. MPI scoring is more specific in predicting the return of bowel functions whereas sensitivity is not accurate in both scoring systems. MPI scoring system is better in predicting requirement of postop ventilation. Neither of the scoring systems predicted prolonged hospital stay accurately as duration of stay is multifactorial – SSI, Respiratory tract infections etc. which were not included for comparison. Thus Mannheim Peritonitis Index is better than WSES Prognostic score in predicting outcome of patients diagnosed with peritonitis secondary to hollow viscus perforation.

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