

“UTILITY OF SURGICAL APGAR SCORE IN PREDICTING POSTOPERATIVE MORBIDITY AND MORTALITY IN PATIENTS UNDERGOING LAPAROTOMY – A PROSPECTIVE STUDY”

ABSTRACT

Background: Health facilities strive to offer quality surgical care by minimizing postoperative complications. Predicting complications facilitates objective clinical decision making during recovery. Compared to existing morbidity and mortality predictive scores, the Surgical Apgar Score is simple and effective. Morbidity and mortality in patients undergoing laparotomy are high; an effective scoring system can reduce these.

Objective: To determine the utility of the Surgical Apgar Score in predicting the thirty day major postoperative complications rates for patients undergoing laporotomy..

Study design: Prospective descriptive study.

Study population: 154 patients aged 13 years and above undergoing laparotomy at Madras Medical College & Rajiv Gandhi Govt General Hospital, Chennai were selected by consecutive sampling until the desired sample size was achieved.

Study duration: March 2016 to September 2016

Material and methods: Intra operative values of the lowest mean arterial pressure, the lowest heart rate and the blood loss were collected using a questionnaire immediately after surgery and the Surgical Apgar Score was derived for each patient. The occurrence of major complications and the mortality rate was determined during a thirty day period starting immediately after surgery. Data was obtained from the admitting ward, the ICU and surgical outpatient clinic notes. Major complication definitions were according to the one described by Copeland et al. Data collected was entered and analyzed using statistics. P values were generated using t test for means, χ^2 for comparison of proportions, analysis of variance

(ANOVA) and where applicable Fischer's exact test. Results were presented in graph, tables and charts.

Results

154 patients were recruited of which 2 were lost on follow up. The mean age in this study was 35.18 years. This study had a skewed distribution of gender with 75% of patients being male. The most common reason for laparotomy is penetrating abdominal injury. This is 18.4% of the overall cause of laparotomy. It could be seen that emergency laparotomy is the major cause for the development of major postoperative complications when compared to elective laparotomies. Female sex, 40 years or lesser age and surgery time more than 2 hours are other noted factors in our study that was found to be associated with a significantly higher rates of complications. It can be observed in our study that, long duration of surgery and a low mean Surgical Apgar Score is having a strong association. From our study we can interpret that, patients having a SAS Of 0 – 4 who belong to the high risk group had a higher complication rate of 58.3% when compared with the patients having a score of 8 – 10 who belong to low risk group. This group had a lower complication rate of 16.6%. It was statistically significant too. This clearly demonstrates the efficacy of the Surgical Apgar Score in selecting patients who are at a higher risk of developing major complications from patients who are at an average risk of developing complications.

Conclusion

Laparotomy surgery is associated with significant morbidity and mortality. The SAS, despite using simple and widely available intra-operative parameters, is useful tool to predict occurrence of 30 day major complications and mortality following laporotomy surgery.

KEYWORDS: SAS, MEAN ATERAL PRESURE, LOWEST HEART RATE, BLOOD LOSS