

## To Prognosticate the outcome of perforated peptic ulcer patients with Jabalpur and Pulp scoring system. “ A comparative study”.

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### **ABSTRACT:**

**AIMS AND OBJECTIVES:** To Compare the positive predictive value of Jabalpur scoring system and Pulp scoring system, and to study the risk factors influencing the post operative outcome.

**MATERIALS AND METHODS:** It is a prospective study and all patients with peptic ulcer perforation were included in this study. After assessment of various parameters , scoring was done using Pulp and Jabalpur scoring systems. Several investigations namely complete blood count, liver function tests, serum urea and creatinine, chest x ray, ECG, coagulation profile, viral markers, abdomen x ray erect and ultrasound were done.

**STUDY DESIGN:** A prospective observational study.

**PLACE AND DURATION:** Department of General surgery GMC Jammu from 1 November2021 to 31 october 2022.

**RESULTS:** Pulp score is an accurate and significant predictor in predicting mortality and morbidity in patients with peptic ulcer perforation. on applying this scoring system ,high risk patients can be optimized and resuscitated in intensive care unit before planning definitive surgery. Pulp score helps surgeons in periphery setup for early referral to tertiary care centers thereby reducing mortality and morbidity.

**CONCLUSION:** Pulp score is an effective and user friendly scoring system to predict mortality and morbidity in peptic ulcer perforation in developing countries. Pulp score pays more importance to co- morbid history of the patient which plays a very important role in the

outcome of patient , thus the Pulp score is comparatively superior to Jabalpur score in predicting mortality and morbidity.

**KEYWORDS:** peptic ulcer perforation, mortality prediction, peptic ulcer perforation score , Jabalpur score.

### **INTRODUCTION:**

Peptic ulcer is defined as circumscribed ulceration of the gastrointestinal mucosa in areas exposed to acid and pepsin and most often caused by Helicobacter Pylori infection. Smoking and use of non steroidal anti inflammatory drugs are important risk factors for perforation peritonitis. The decline in overall incidence and surgical intervention in peptic ulcer disease is attributed to the increased knowledge of ulcer pathogenesis and development of proton pump inhibitors. Peptic ulcer disease is associated with potentially life threatening complications including bleeding, perforation and obstruction. perforation is the second most frequent complication after bleeding. Intestinal perforations are one of the most common causes for admissions in surgical emergency. Peptic ulcer perforations were found to be more common in males, this was attributed to smoking and alcohol consumption. In the geriatric population excess NSAID intake and steroids were causative factors. perforation leads to seepage of gastrointestinal contents into the peritoneal cavity which causes an inflammatory process leading to cascade of events eventually landing into electrolyte imbalance, shock and multi organ failure.

Pulp score was used to predict the 30 day mortality in peptic ulcer patients. The parameters included are: Age, co-morbidity, malignancy , presence of cirrhosis, steroid use, shock on admission, duration of perforation, serum creatinine and ASA score. Total pulp score ranges from 0-18.

Low risk of mortality= score 0-7.

High risk of mortality= score 8-18.

Jabalpur score includes parameters as: perforation to operation interval, age, mean systemic blood pressure, heart rate, serum creatinine. Total score ranges from 0-21.

Higher score > 15 = poor outcome.

Lower score < 4 = Good outcome.

The complex nature of surgical infections, the multifaceted aspects of treatment, and the increasing complexity of ICU support make evaluation of new diagnostic and therapeutic

advances in this field very difficult. Scoring systems providing objective descriptions of patients conditions at specific points in the disease aid for better understanding of these problems. A major limitation in scoring systems is their dependence on sophisticated investigations. Such investigations may not be available in developing countries. Therefore, a simple prognostic scoring system which can be easily used in developing countries is needed. The aim of the study is to compare the Predictive accuracy of two scoring systems namely the Jabalpur and pulp scoring systems. The reason behind choosing these two scoring systems is that the variables used can be easily calculated with the available investigations in GOVT Hospital setup . Being not so cumbersome these two scoring systems are very useful in predicting outcome in patients with peptic ulcer perforation.

**AIMS AND OBJECTIVES:** 1) TO compare the positive predictive value of Jabalpur and Pulp scoring systems in peptic ulcer patients.

2) To assess and predict morbidity and mortality among patients who are to be operated for peptic ulcer perforation in GMC Jammu.

3) To study the risk factors influencing the post operative outcome.

**MATERIALS AND METHODS:** It is a prospective study conducted in GMC Jammu from 1 November 2021 to 31 October 2022. After assessment of various parameters scoring was done. The predicted results were compared with the observed results over a follow up of 30 days and the predictive accuracy of each scoring system determined. Detailed clinical history and additional history like age, sex and history of NSAID or steroid intake were obtained.

**PREOPERATIVE PREPARATION:** Besides routine preoperative preparation, patients were prepared psychologically explaining them about the nature of the procedure, its need and possible complications that may arise and the need of postoperative incentive spirometry for decreasing the risk of postoperative chest complications.

**STUDY PERIOD:** The study was carried over a period of one year w.e.f 1 November 2021 to 31 October 2022. The patients were followed during the hospital stay as well as 3 months after discharge.

**STUDY DESIGN:** A prospective observational study.

**INCLUSION CRITERIA:** 1) patients undergoing surgery for peptic ulcer perforation.

2) Age >18 years.

**EXCLUSION CRITERIA:** 1) patients having undergone surgery for perforation peritonitis due to some causes other than peptic ulcer.

2) Gastrointestinal perforation not involving stomach and duodenum.

3) Re perforation in patients who had already undergone surgery for peptic ulcer perforation.

**DISCUSSION:** In our study, the maximum number of patients are present in age group 41-50 and 51-60 years contributing 30 each, there is male preponderance in the study with males contributing 89% of the total patients.

KORANNE A et al., in their study “ A comparative study between peptic ulcer perforation score ,Mannheim peritonitis index ,ASA score and Jabalpur score in predicting the mortality in perforated peptic ulcers” observed a total of 45 patients and noted that mean age of patients was 42.5 years, with 33 males and 10 females.

In our study it was observed that Cellan Jones repair was surgical treatment of choice in 95% of patients and modified graham patch repair was performed in 5% of cases.

In a study conducted by CHAN et al on perforated peptic ulcer it was noted that the rate of intra abdominal collection, reoperation, leak and mortality was similar when either omental patch repair or gastrectomy was performed in gaint pulp’s.

In our study it was noted that intra operative finding of majority of cases was duodenal ulcer perforation(45%), followed by pyloric perforation (32 %) and pre pyloric perforation (23%).

SAh DN and Upadhyay PK in their study “ Scoring system in outcome prediction of postoperative mortality and morbidity in perforated peptic ulcer” noted that perforations in 1 part of duodenum(ant)-41%, stomach (antrum/body) -5, juxta-pyloric -4.

In our study the mortality rate of patients was 15% in which wound infections/dehiscence and ARDS were the leading postoperative complications, these findings could be explained by the fact that surgery for peptic ulcer perforation is regarded as contaminated or dirty.

It was comparable with the study titled clinical presentation, surgical outcomes and the accuracy of scoring systems in predicting postoperative mortality and morbidity by LOHSIRIWAT et al.,(2009).

**RESULTS:** In our study conducted on 100 patients presenting with peptic ulcer perforation, it was noticed that majority of the patients were in age group of 41-50,51-60 years (30 each) with males contributing about 89% of the total cases. The most common surgical intervention done was Cellan Jones repair with duodenal ulcer perforation the commonest intra operative finding.

In our study 15% of patients expired due to complications of which 3% had wound infections/dehiscence, 2% had leakage from operative site, 1% had acute respiratory distress syndrome.

**CONCLUSION:** Pulp score is an accurate and significant predictor in predicting mortality and morbidity. pulp score help surgeons in periphery setup for early referral to tertiary care centers so that peri operative mortality and morbidity could be reduced.

Pulp score apart from taking into account of all variables that are even included in the Jabalpur score also pays significance to the other vital information of the past history, this inclusion has improved the AUC of the pulp score.

Pulp score is an effective and user friendly scoring system to predict mortality and morbidity in peptic ulcer perforation in developing countries. pulp score is comparatively superior to Jabalpur score in predicting mortality and morbidity thereby making it a more simple, reliable and feasible scoring system.

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