



A PROSPECTIVE STUDY OF DETERMINANTS OF FACTORS AFFECTING OUTCOME OF PERFORATED PEPTIC ULCER DISEASE.

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Abstract

Peptic ulcer perforation is one of the most common perforation in asian countries and is still in era of proton pump inhibitors. peptic ulcer disease can be divided into gastric and duodenal ulcers peptic ulcer perforation the bacteria released into the peritoneal cavity following perforation of a hollow viscus cause secondary peritonitis the morbidity and mortality associated with the presence of enterococcus. the prospective factors determining the outcome were studied such as age, sex, stage of presentation, co morbidities, renal failure, use of nsoids ,multiple addiction and physical factors such as heart rate ,blood pressure, size and site of perforation ,amount of contamination and investigations ,days stay and complications were evaluated. Assessment of these factors at presentation can lead to identification of patients in need of intensive care and early aggressive surgical steps to decrease morbidity and mortlity were studied.60 patients with perforative peritonitis presented to the emergency department were included and studied. detailed history & clinical examination performed, routine blood investigation were done followed by the use of appropriate diagnostic procedures such as x-ray erect abdomen, with additional help of abdominal ultrasound and abdominal ct scan. this study concluded that factors causing adverse outcome in patients were identified as pre operative renal failure, multiple addictions ,peritoneal contamination, ,size of perforation were known to cause significant mortality and morbidity in this study.

Keyword: perforation, peptic ulcer disease, peritonitis.



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Introduction

Peritonitis due to hollow visceral perforation is commonly encountered in surgical practice. It is defined as inflammation of the serosal membrane that lines the abdominal cavity and the organs contained therein. ⁽¹⁾ Mankind knows peritonitis as a disease from the days of Hippocrates. Hippocrates described —Facies Hippocratica in 400 BC.etiology factors such as- Smoking,use of non-steroidal anti-inflammatory drugs, chronic Helicobacter Pylori infection, excessive alcohol, coffee, and stress are important risk factors for perforation. ⁽²⁻⁶⁾Perforation of peptic ulcer causes introduction of bacteria and gastric acid in otherwise sterile peritoneum to have peritonitis. This study was done in Patient with gas under diaphragm with peptic ulcer perforation were admitted in emergency department of lokmanya tilak medical college,sion ,Mumbai and were evaluated for different parameters .A single centric observational prospective study was conducted from may 2014- may 16 ,inclusion criteria was patient of peptic ulcer perforation., with either sex, above age of 12 yrs,and willing to participate .Patients detailed history and clinical examination and all routine blood investigation were done.A standard method of exploratory was midline laparotomy were performed with grahams patch with primary closure of perforation was done with 2-0 mersik round body in intrrepted manner, for all stable patients,for unstable patients abdominal pearacentasis using drain under local anaesthesia followed with definitive procedure.As a standard procedure ryles tube and foleys were put,patient having contamination>1000 ml feeding jejunostomy or nj tube was inserted,with contamination more than 1000 ml pertitoneal lavage was given,abdominal drain were kept.iv fluids and injectable antibiotics were given. All the patient pre,intra,postoperative were assesed and aforesaid parameters were entered and recorded.Observation and stastical analysis were tabulated and analysed by chi square test and student t test as test of stastical significance interpreted at 5 % significant level.

Table, graph and figures

Addiction Association between addictions and outcome

| Addiction | Discharge | | Dea th | |
|-------------------------|-----------|-------|--------|------|
| | No. | % | No. | % |
| No (N = 27) | 27 | 100.0 | - | - |
| Smoker (N = 13) | 12 | 92.3 | 01 | 7.7 |
| Alcoholic (N = 11) | 10 | 90.9 | 01 | 9.1 |
| Chewer (N = 02) | 02 | 100.0 | - | - |
| Combination (N = 03 07) | | 42.9 | *04 | 57.1 |

By Chi – Square Test

P = 0.001, *Significant

ADDICTION

This table reveals that, 57.1% of the cases who had combination addiction had expired which was significantly more than 7.7% of cases who were only smokers.

Association between creatinine and outcome

| Creatinine level | Discharge | Death |
|----------------------|------------|-------------|
| | No. % | No. % |
| <1.4 mg/dl (N=44) | 43 97.7 | *01 02.3 |
| ≥1.4 mg/dl (N=16) | 11 68.8 | 05 31.3 |

By Chi – Square Test P=0.001 * Significant

Association between creatinine levels and outcome

According to this study, 2.3% of the cases with serum creatine <1.4/mg/dl expired which was significantly less than 31.3% of the cases with serum creatine ≥1.4/mg/dl.

Association between size of perforation and outcome

| Size | Discharge | Death |
|-----------------|------------|-------------|
| | No. % | No. % |
| <1/cm (N=48) | 46 95.8 | *02 04.2 |
| ≥1/cm (N=12) | 08 66.7 | 04 33.3 |

By Chi – Square Test P=0.001 * Significant

Above study reveals that, 4.2% of the cases with <1cm size of perforation expired which was significantly less than 33.3% of the cases with ≥1/cm size of perforation.

Association between amounts of contamination and outcome

| Amount of contamination | Discharge | Death |
|-------------------------|------------|-------------|
| | No. % | No. % |
| <1000 ml (N=47) | 46 97.9 | *01 02.1 |
| ≥1000 ml (N=13) | 08 61.5 | 05 38.5 |

By Chi – Square Test P =0.001 * Significant

In this table, 2.1% of the cases who had <1000 ml contamination expired which was significantly less than 38.5% of the cases who had \geq 1000 ml contamination.

DISCUSSION:

In study of 60 patients, the determinants of highest mortality and morbidity was seen in patients having creatinine greater than 1.4mg/dl, having addiction with more than 1 substance and contamination greater than 1000 ml. the factors affecting outcome

Addiction:

In 60 cases, 33 cases had some form of addiction of which 57.1% had mortality having more than 1 addiction was statistically significant. (p value=0.001)

Morbidity in patients who had one or more addictions was 100% as compared to only smokers which was 25%, however this was less than the morbidity in patients without any addictions (44.4%), but this difference was statistically not significant (p=0.249).

In a study by Ikko Kato et al.⁽⁶⁾ the risk of gastric ulcers progressively increased with increasing pack-years of cigarette smoking

In a study by F. Smedley et al.⁽⁷⁾ cigarette smoking was significantly more common in patient with perforated duodenal ulcers than controls.

Serum Creatinine

This study revealed that factor creatinine greater than 1.4 mg/dl had 31.3% mortality and creatinine less than 1.4 mg/dl was 2.3%. this difference was statistically significant (p=0.001). However, morbidity in cases with creatinine \geq 1.4 mg% was 63.6% as compared to 39.5% in those with serum creatinine < 1.4 mg% which was statistically not significant (p=0.151). Thus, raised creatinine \geq 1.4 cm affects the outcome of the patient. Similar findings are seen in the study by Arpan Mishra et al.⁽⁸⁾ Jeetendar Paryani et al.⁽⁹⁾ found that mortality is high if creatinine is >1.5mg% (p=0.0038).

Moller et al.⁽¹⁰⁾ have reported renal insufficiency on admission as an independent risk factor related to mortality in patients operated for peptic ulcer. Raised serum creatinine is an indicator of sepsis.

Our study revealed that 4.2% of patients with less than 1cm of perforation died as compared to 33.3% of cases with perforation \geq 1cm, which is statistically significant (p=0.001).

Ali Zohar Nomani et al.⁽¹⁰⁾ found that positive predictor of mortality includes size of perforation greater than 0.5 cm. Size of largest perforation was found to be significant predictor for both morbidity and mortality in study by Nakano A et al.⁽¹¹⁾ and Chiarugi M et al.

Amount of contamination:

In our study, out of 60 patient 13 patients had \geq 1000 ml of contamination out of which 5 died (38.5%) which was more and statistically significant($P=0.001$) than the patients died of having $<$ 1000 ml contamination (2.1%) The studies done in past by Ali Zohar Nomani et al.⁽¹²⁾ are consistent with our findings. Amount of contamination changes operative management in perforative peritonitis affect morbidity and mortality. Amount of contamination is one of the determinant that strategize whether or not a patient should undergo a primary repair or exteriorization of bowel.⁽¹³⁾

Result

In this prospective study of determinants of factors affecting outcome of perforated peptic ulcer disease,addiction with more than 1 substance ,creatinine >1.4 mg/dl,perforation size >1 cm,contamination >1000 ml are important factors causing mortality was concluded in this study.

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