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STUDY OF PROGNOSIS OF PERFORATED PERITONITIS AFFECTED BY ALBUMINURIA IN A TERTIARY CARE HOSPITAL OF SOUTHERN ODISHA, INDIA.

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ABSTRACT: Introduction: There is scarcity of evidence on albumin in urine as a predictor of postoperative mortality in perforation peritonitis. Albuminuria in perforation peritonitis has important prognostic value.**Objective:** To evaluate the relationship between albuminuria and postoperative mortality in perforation peritonitis.**Materials And Methods**: This prospective study was conducted in Department of General Surgery, MKCG Medical college and Hospital, Berhampur over a period of 24 months from July 2019- June 2021. The study included 102 patients with perforation peritonitis. Urinary albumin was measured at admission in all patients diagnosed with perforation peritonitis. The relationship between perforation site, surgical type, postoperative complications, mortality, the presence of urinary albumin and postoperative mortality in perforated peritonitis was evaluated and tabulated in Microsoft® Excel® and statistically analysed using IBM® SPSS® 23.0, for Windows®, to bring out the results of the study. **Results:** 102 patients were studied presenting with perforation peritonitis in the age group of 15 to 70years with mean age of presentation 43.13 years. 76patients (74.5%) had urine albumin present and 26 (25.49%) 149 patients did not have urine albumin. Of the 76 patients with albuminuria, 24 (31.5%) died, and 2 (7.6%) of the remaining 26 patients without albuminuria died. Therefore, we can conclude that albuminuria can be used as an unfavourable prognostic factor to evaluate postoperative mortality in perforating peritonitis.**Conclusion:** Albuminuria is a prognostic factor for evaluating postoperative mortality in perforation peritonitis.

Keywords: Perforated peritonitis, Albuminuria, Prognostic factor, Mortality

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INTRODUCTION:

Intestinal perforation has been a surgical problem since the past few decades. Perforation occurs after the pathology has expanded to the total thickness of the hollow organ, contamination of the

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peritoneum with its contents.[1]Left untreated, it results in bacteraemia, systemic sepsis, multiple organ failure, shock, and causing formation of abdominal abscesses.[2]In majority of patients peritonitis results from combined aerobic and anaerobic organisms.[3]. Combination of improved surgical technique, anti-microbial therapy and medical aid support has improved the end result in such cases [4, 5]. But still mortality is extremely high in these cases. Despite upgrades in surgical and clinical treatments, the general mortality rate is 30% and the mortality rateof diffuse peritonitis is as much as 70%. [6, 7, 8, 9]

There is scarcity of evidence on albumin in urine as a predictor of postoperative mortality in perforation peritonitis.Somore studies are encouraged to show the fact.Gastrointestinal perforation may be a major surgical problem in developing countries with severe morbidity and mortality, and is one in every of the foremost common causes of emergency surgery performed in MKCG Medical college and Hospital, Berhampur.

Aim:

To evaluate the relationship between albuminuria and postoperative mortality in perforation peritonitis**.**

MATERIALS AND METHODS:

This prospective study was conducted in Department of General Surgery, MKCG Medical college and Hospital, Berhampur over a period of 24 months from July 2019- June 2021. The study included 102 patients with perforation peritonitis who met the inclusion and exclusion criteria.

Inclusion Criteria:

All cases of perforation peritonitis were included.

Exclusion Criteria:

- Patients with peritonitis due to anastomotic leak and traumatic intestinal perforation.
- Patients with severe heart diseases, chronic respiratory diseases, chronic kidney disease, and immune compromised patients.

Ethical clearance :
The present study was approved by the institutional Ethical Committee of M.K.C.G Medical College and Hospital, Berhampur, on human subject research.

Method of collection of data:
Prior written consent was obtained from all patients. Our study considered data on demographic characteristics, type of surgery, postoperative complications, and mortality. A laboratory report showing albuminuria was chosen as the standard baseline for this study. Urinary albumin was measured at admission in all patients diagnosed with perforation peritonitis. The relationship between perforation site, surgical type, postoperative complications, mortality, the presence of urinary albumin and postoperative mortality in perforated peritonitis was evaluated and tabulated in Microsoft® Excel® and statistically analysed using IBM® SPSS® 23.0, for Windows®, to bring out the results of the study.

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RESULTS:

The study group had 102 patients in the age group of 15 to 70years with mean age of presentation 43.13 years. Most of the patients were male 82 (80.3%). There were 20 women (19.6%). Laparotomy was performed for 43 gastric perforations (42.15%), 37 ileal perforations (36.27%),10 appendicular perforations (9.87%), 7 duodenal perforations (6.86%), 2 jejunal perforations (1.96%), and 1 colonic perforation (0.9%), 1(0.9%) perforation of Meckel's diverticulum and 1(0.9%) perforation of cecum.

Fig 1: Pie chart showing perforation sites according to frequency in this study

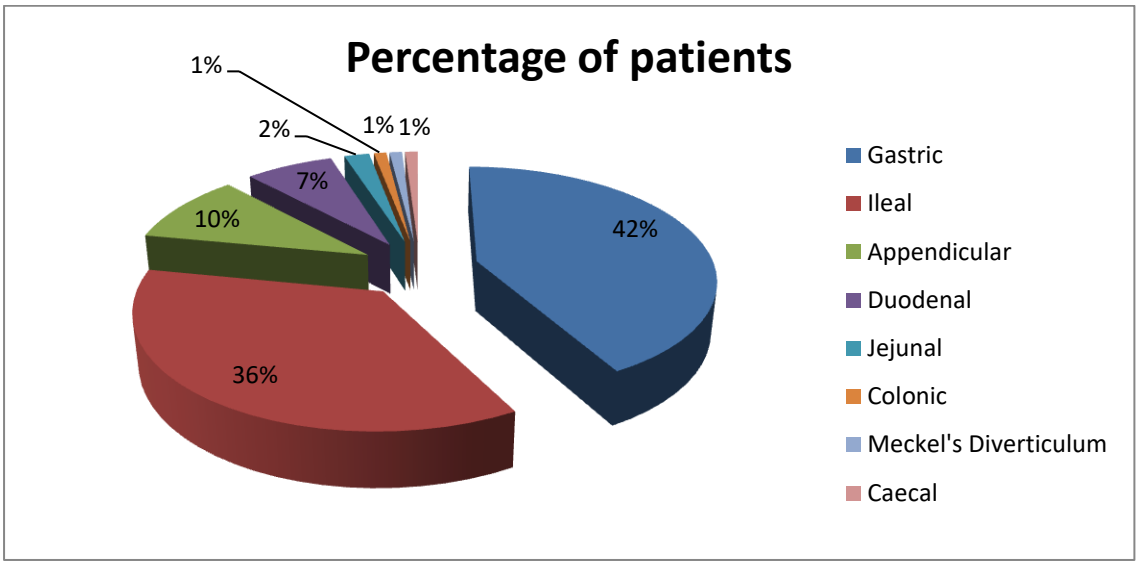

Table1.Relationship between Urine Albumin and Mortality.

URINE ALBUMIN	DEATH	SURVIVAL	TOTAL	
URINE ALBUMIN PRESENT	24	52	76	X^2= 5.8198.
URINE ALBUMIN ABSENT	2	24	26	P value= 0.0213
TOTAL	26	76	102	

Discussion:

The septic shock in perforation peritonitis affects several organs, including the kidneys. Albuminuria due to septic shock leads to a decrease in the amount of albumin stored in the body, which leads to a decrease in the amount of albumin in the body, resulting in poor prognosis and poor recovery.[10] Albumin is a major determinant of oncotic pressure in plasma. It plays an important role in regulating the distribution of fluids between compartments. Besides, it has many biological properties that can be important not only for its physiological but also for its therapeutic effect. The non-neoplastic properties of albumin include molecular transport, free radical scavenging, regulation of capillary permeability, neutrophil adhesion and activation, and haemostatic effects.[11]Albumin synthesis is affected by inflammation and nutrition.

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Severe hypoalbuminemia is seen in patients with severe sepsis and peritonitis.[12]Jain et al in their study found mortality of 20 patients (27.02%) in majority of patients 74 (67.27%) with Albuminuria. A high mortality rate of 24 patients (31.57%) was observed in the majority of 76 patients (74.5%) with albuminuria, indicating that urinary albumin is a major determinant of poor prognosis in perforation peritonitis.

CONCLUSION:

In the present study, albuminuria was found to be a good predictor of surgical outcome in emergency laparotomy. It is an inexpensive test that can be used as an independent predictor of perforated peritonitis.

Ethical Committee Approval

The present study was approved by the Institutional Ethical Committee of M.K.C.G Medical College and Hospital, Berhampur on human subject research.

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Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.

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