



Research Article

Post Operative Outcome of Perforation Peritonitis Influenced By Albuminuria?

Authors

Jain Neeraj Kumar¹, Maini Sunil², Khobragade Vicky³, Jain Manjari⁴

^{1,2,3}Assistant Professor, Dept of General Surgery, RKDF Medical College and Research Centre, Bhopal, India

⁴Assistant Professor, Dept of Obstetrics and Gynaecology, RKDF Medical College and Research Centre, Bhopal, India

*Corresponding Author

Dr Neeraj Kumar Jain

Assistant Professor, Department of General Surgery, RKDF Medical College and Research Centre, E-7/435, M.I.G., Arera Colony, Bhopal, Madhya Pradesh, India Pin 462016

Phone (or Mobile) No.: +91-(782) 801-2235, +91-(942) 500-4592

Email: msnkjain@gmail.com, boyneerajjain@gmail.com

ABSTRACT

Background: *The prognostic significance of albuminuria in perforation peritonitis is significant. In this study we assess relation between presence of albumin in urine and post operative mortality in perforation peritonitis.*

Method- *Our prospective observational study was conducted at Department of General Surgery, R.K.D.F. Medical College & Research Centre, Bhopal, during period of August 2013 to May 2015. Total 110 cases of perforation peritonitis were included. Urine albumin was measured in all patients diagnosed as perforation peritonitis at the time of admission and during hospital stay. Presence of albumin in urine was recognized as albuminuria. Site of perforation, Type of surgery, post operative complications, mortality and the association between presence of albumin in urine and post operative mortality in perforation peritonitis was assessed and evaluated.*

Result- *In this study of 110 patients, albumin in urine was present in 74 (67.27%) patient and was absent in 36 (32.72%) patients. Out of 74 patients with albuminuria, 20 (27%) patients died and remaining 36 patients without albuminuria 3(8.3%) had died. In present study, significant (p value < 0.05) association was found among albuminuria and mortality in post operative peritonitis.*

So it may be concluded that albuminuria can be used as poor prognostic factor for assessing post operative mortality in perforation peritonitis.

Conclusion- *Albuminuria is a significant risk factor in assessing post operative mortality in perforation peritonitis.*

Keywords- *Albumin, Albuminuria, Perforation peritonitis, Mortality, Septicaemia.*

Introduction

Peritonitis due to perforation of the gastrointestinal tract is the most common surgical emergency all over the world. The spectrum of etiology of perforation differs from its western counterpart in India ^[1,2]. Majority of the patients present late, with complication like purulent peritonitis and septicemia ^[3]. Surgical treatment of perforation peritonitis is highly demanding and very complex. Combination of improved surgical technique, anti microbial therapy and intensive care support has improved the outcome in such cases ^[4]. But still mortality is very high in these cases.

Objective of this study is to assess relation between albuminuria and post operative mortality in perforation peritonitis.

Factors contributing to the high mortality and postoperative complications are advanced age, late presentation, delay in the treatment, septicemia and associated co morbid conditions, respiratory complications are the known risk factors for the high mortality ^[5].

But albuminuria is still not added as prognostic indicator for perforation peritonitis. Hence further studies are recommended to prove the fact.

Septicemia causes derangement of multiple organs, including renal function leading to acute renal failure and hence decreases in urine output with proteinuria ^[6].

Septic shock causes decreased absorbing capacity of kidney causing albuminuria, which further decreases body albumin reserves leading to poor recovery and increased mortality and morbidity ^[6].

Aim

To assess the relation between albuminuria and post operative mortality in perforation peritonitis.

Material and Methods

A total of 110 patient of perforation peritonitis were selected by simple random method.

Inclusion criteria: All cases with perforation peritonitis were included.

Exclusion criteria: All cases of primary peritonitis or peritonitis due to anastomotic leak or any other abdominal surgery and traumatic intestinal perforation were excluded. All patients below 20yrs and above 60 yrs were excluded. All Patient with other co morbid illnesses like history of hypertension, diabetes mellitus, tuberculosis and renal disease were excluded.

Informed written consent was taken from all patients.

Data on demographic characteristics, type of surgery, post operative complication and mortality was considered into our study. Laboratory report showing albuminuria was selected as standard baseline in this study. Association between albuminuria and mortality was determined.

Statistical analysis was done by using SPSS =16 (vinsen 16-chicong) and variable used in this study compiled in excel sheet .Chi Square test of significant performed wherever applicable and P value considered significant (<0.05).

Results

There were 110 patients in study group, Majority of patients were males 89(80.9%).Females were 21(19.1%). Laparotomy was performed in gastric perforation 41(37.27%), ileal perforation 36 (32.72%), appendicular perforation 16 (14.54%), duodenal perforation 11(10%), jejunal perforation 3 (2.72%), and colonic perforation 1(0.9%), meckel's diverticulum perforation 1 (0.9%) and caecal perforation 1(0.9%).

Fig 1: Pie chart showing Site of perforation as per there incidence in present study

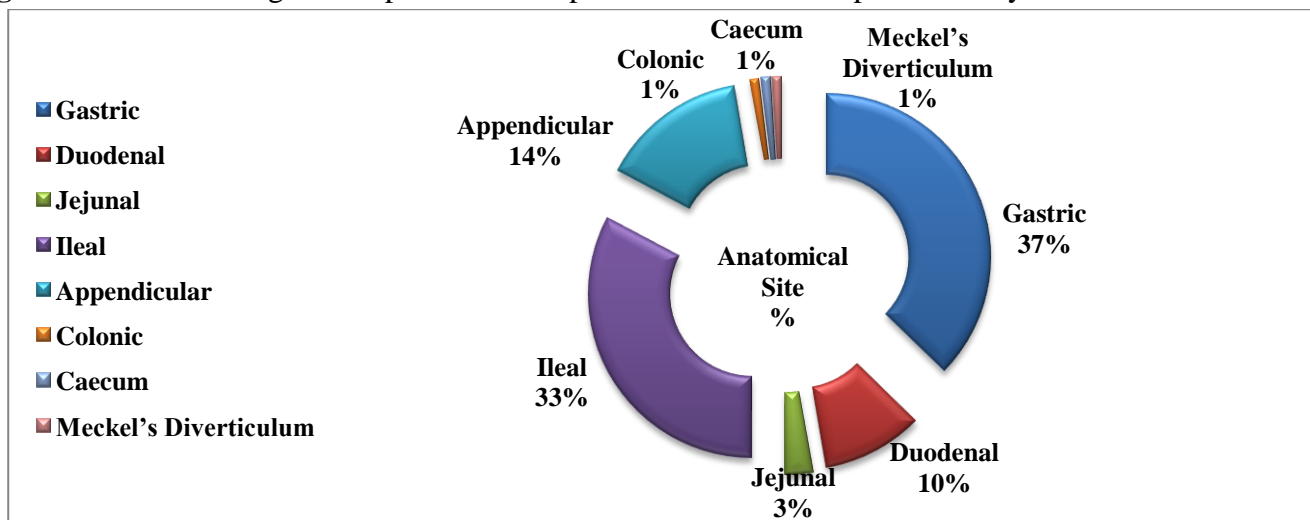


Table 1: Relation between urine albumin and mortality

Urine Albumin	Death (Mortality)	Survived	Total	$\chi^2 = 5.109$ P value=0.0238 D.F.=1
Urine Albumin present	20 (27.02%)	54 (72.97%)	74	
Urine Albumin Absent	3 (8.33%)	33 (91.66%)	36	
T o t a l	23 (20.9%)	87 (79.09%)	110	

Fig 2: Urine Albumin and Mortality

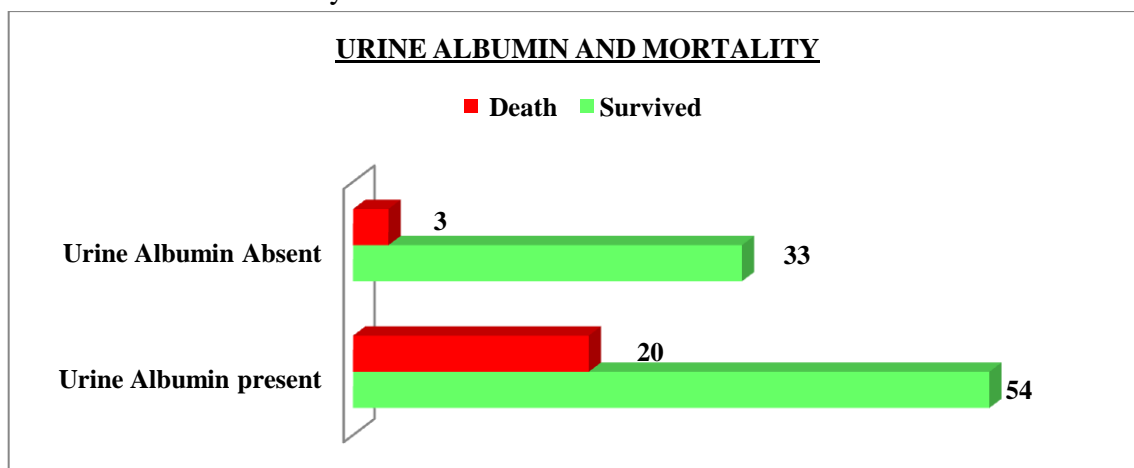
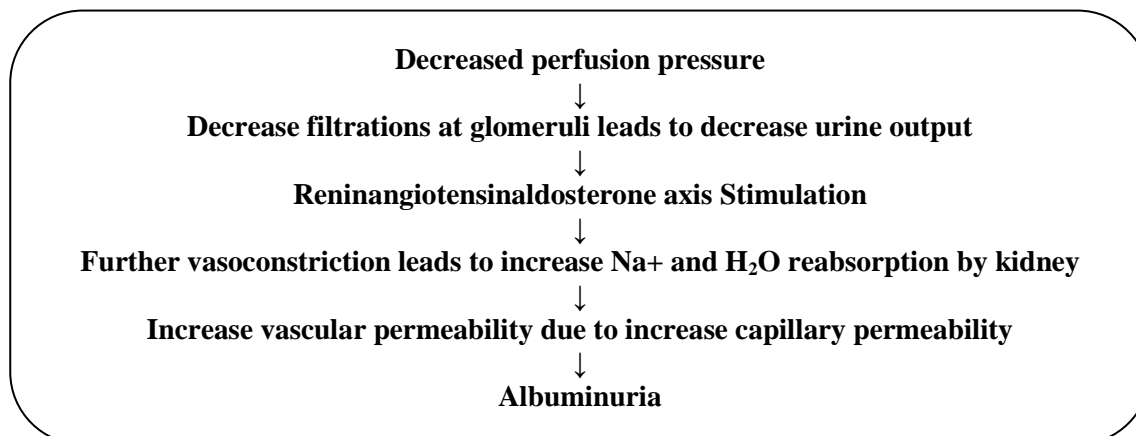


Fig. 3 Pathophysiology of albuminuria



Discussion

Septic Shock in perforation peritonitis affects multiple organs including kidneys. Albuminuria due to septic shock leads to decreased albumin reserves in body resulting in decreased albumin reserves in body responsible for poor prognosis and recovery^[6]. Albumin, the body's predominant serum binding protein, has several major functions^[7,8]. It maintain normal plasma colloid oncotic pressure and comprises 50% of protein content in the body. Albumin transports fatty acids, minerals, bilirubin, hormones, vitamins and drugs. The cytokines (TNF, IL-6) released as part of the inflammatory response to physiologic stress (sepsis, surgery and trauma) can decrease serum albumin by increased vascular permeability, increased degradation and decreased synthesis.

Trans capillary Escape Rate (TER) of Albumin is about 10 times the rate of synthesis and short term changes in albumin concentration are due to increased vascular permeability. Albumin TER is increased 3 folds following Sepsis and peritonitis^[6].

High mortality of patients 20 (27.02%) was seen in majority of patients 74 (67.27%) with Albuminuria, showing Urine albumin plays major determinant factor for poor prognosis in perforation peritonitis.

Conclusion

In present study, albuminuria was found to be good predictor Indicator of surgical outcome in emergency laparotomy. It is a low cost test and can be used as independent prognostic factor in perforation peritonitis.

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Declarations

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Conflict of interest: None declared

Ethical approval: The study was approved by ethical committee of RKDF Medical College.

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