Original Research Paper

Volume - 11 | Issue - 04 | April - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Surgery

CLINICAL STUDY AND OUTCOME OF INTRA-ABDOMINAL INFECTIONS CAUSING PERITONITIS NECESSITATING SURGICAL INTERVENTION

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ABSTRACT

Background: Intra-abdominal infections (IAIs) causing peritonitis are common surgical emergencies and an important cause of morbidity and mortality. Pathogenesis of bacterial peritonitis depends on various factors. Mortality associated with severe intra-abdominal infections remains high.

Aims Of The Study: To study and analyse the clinical features, modes of presentation, etiological factors, various modalities of management and the morbidity & mortality associated with Intra-abdominal infections causing peritonitis.

Methodology: This retrospective study was conducted on 50 patients from the period of May 2019 to February 2020 from the inpatients of surgical unit in DR.PSIMS &RF.

Results: Respiratory tract infection, surgical site infection are the most common surgical complications. Mortality was 10%. Factors affecting mortality were elderly age, delayed presentation, bowel gangrene and major resection.

Conclusion: Prompt evaluation, diagnosis and management is key to a favorable outcome in intra-abdominal infections causing peritonitis.

KEYWORDS : Intra-abdominal infections, Peritonitis.

INTRODUCTION:

Intra-abdominal infection (IAI) indicates a disease in the abdominal cavity that may or may not cause peritonitis. Peritonitis denotes inflammation of the peritoneum from any cause[1]. IAIs are classified into uncomplicated and complicated[2] infections. In uncomplicated IAIs, the infection only involves a single organ and does not extend to peritoneum. In complicated IAIs (cIAIs), the infectious process proceeds beyond the organ into the peritoneum, causing either localized or diffuse peritonitis. Intra-abdominal infection (IAI) is an important cause of morbidity and mortality[3].They are common surgical emergencies and have been reported as major contributors to non-trauma deaths in the emergency departments worldwide[4]. Pathogenesis of bacterial peritonitis depends on, bacterial load & virulence, the synergy between various bacterial species and bacterial growth promoters like the presence of intestinal contents, inert materials, fibrin, or foreign bodies. Despite significant advances in diagnosis, surgical intervention, antimicrobial therapy and intensive care support, mortality associated with severe intra-abdominal infections remains unacceptably high.

In our study evaluation of age, gender distribution, etiopathogenesis, clinical features, investigations, various surgical procedures, microbial culture, post-operative complications, morbidity and mortality have been evaluated.

METHODOLOGY:

Inclusion Criteria

1. Patients with features of intra-abdominal infections necessitating surgical intervention.
2. Patient age greater than 18 years.

Exclusion Criteria

1. Patient age less than 18 years.
2. Patients not willing to participate in the study.
3. Patients with spontaneous bacterial peritonitis.
4. Patients who were managed conservatively.

It is a retrospective study involving 50 cases from May 2019 to February 2020 with features suggestive of peritonitis admitted in Dr. PSIMS & RF. The data was collected with meticulous history taking, clinical examination, and appropriate radiological, serological, microbiological, operative findings and follow up of the cases.

RESULTS:

Table 1: Age Distribution

Age	Cases number	Percentage
18 - 30 years	9	18%
30 - 40 years	15	30%
40 - 50 years	15	30%
50 - 60 years	10	20%
More than 60 years	1	2%
Total	50	100%

Table 2: Gender Distribution

Gender	Number of cases	Percentage
Male	38	76
Female	12	24
Total	50	100

Table 3: Aetiological Factors

Aetiology	Number of cases	Percentage
Duodenal perforation	15	30
Ileal perforation	10	20
Appendicular perforation	8	16
Gastric perforation	6	12
Gangrene bowel	4	8
Jejunal Perforation	4	8
Ruptured liver abscess	3	6
Total	50	100

Table 4: Time Of Presentation

Time	Number of patients	Percentage
<24 hours	19	38
>24 hours	31	62

Table 5: Symptoms And Signs

Symptoms and Signs	Total no. of Cases	Percentage
Pain	50	100
Tenderness	50	100
Vomiting	35	70
Rigidity	31	62
Tachycardia	28	56
Fever	27	54

Absence of bowel sounds	25	50
Constipation	19	38
Distension	13	26
Hypotension	12	24
Diarrhea	4	8

Table 6: Air Under Diaphragm In Erect Abdomen X-ray

Radiological Investigations	Total no. of Cases	Percentage
Air under Diaphragm	31	62
Air fluid levels in Bowel	3	6

Table 7: Operative Procedure

Surgery	Number of cases	Percentage
Grahams patch closure	18	36
Simple closure of perforation	17	34
Appendicectomy	8	16
Resection and anastomosis	4	8
Peritoneal lavage only	3	6
Total	50	100

Table 8: Microbes Cultured

Microbe	Number of patients	Percentage
E.coli	16	32
Polymicrobial	4	8
Enterococcus faecalis	3	6
Staphylococcus species	2	4
Klebsiella	2	4
No growth	23	46
Total	50	100

Table 9: Post-operative Complication

Complication	Number	Percentage
Isolated Respiratory tract infection	11	22
Isolated Surgical site infection	7	14
Surgical site infections & Respiratory tract infection	5	10

Table 10: Mortality

Aetiology	Mortality
Duodenal perforation	2
Gangrene bowel	2
Ileal perforation	1

Table 11: Factors Affecting Mortality

Age in years	Time of presentation	Leukocytosis	Creatinine	Coagulation Profile	Diagnosis
52 yrs	Delayed	Present	Raised	Normal	Duodenal perforation
64 yrs	Early	Present	Raised	Altered	Gangrene bowel
67 yrs	Early	Present	Raised	Normal	Duodenal perforation
58 yrs	Delayed	Present	Raised	Normal	Gangrene bowel
50 yrs	Delayed	Present	Raised	Altered	Ileal perforation

DISCUSSION:

This study is a retrospective study involving 50 cases of intra-abdominal infections causing peritonitis necessitating surgical intervention admitted in Dr. PSIMS& RF from May 2019 to February 2020. The data was collected regarding history, clinical examination, appropriate radiological, serological, microbiological& intra operative findings and the case were followed up.

Most of the patients were in middle age (30-50 years age group). 76% patients were males. The most common operative finding was duodenal perforation (30%) followed by ileal perforation, appendicular perforation, gastric perforation, gangrene bowel and ruptured liver abscess. Majority (62%) of the patients presented late to the hospital (beyond 24 hours). Pain was present in all cases followed in frequency by vomiting and fever. Abdominal tenderness was present in all cases and tachycardia was present in most cases. Hypotension, rigid abdomen and absent bowel sounds were present in most cases in our study associated with sepsis. Leukocytosis was present in 60% of cases and 24% of cases there was raised creatinine levels. 62% of cases in our study had air under diaphragm on erect abdomen x- ray. Air-fluid levels on erect abdomen x- ray were seen in 6% of cases in our study. The initial priority was resuscitation & analgesia followed by surgical intervention, control of contamination and definitive procedure. The surgical procedure varied according to the pathology which included closure of perforation, appendicectomy, resection & anastomosis and peritoneal lavage. Respiratory tract infections (22 %) was the most common post-operative complication followed by surgical site infections. E. coli was the most common organism isolated (32%) from the peritoneal fluid. Mortality rate was 10% and the factors affecting mortality were advanced age of patient,delayed presentation, bowel gangrene and major resectional procedures.

CONCLUSION:

The atypical clinical picture and delay in presentation can make the diagnosis of intra-abdominal infections causing peritonitis a difficult issue. An unfavorable outcome is influenced by increased age, delayed presentation, altered renal parameters, altered coagulation profile and gangrenous bowel. Careful clinical examination with pertinent investigations is important to achieve an accurate diagnosis, which should be followed by resuscitation and a rapid control of contamination & definitive surgical procedure.

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