

## Original Research Article

# Clinicoepidemiology and treatment outcome of acute intestinal obstruction in adult in KIMS Amalapuram: a retrospective observational study

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### ABSTRACT

**Background:** The intestinal obstruction is a common potentially risky surgical emergency in all age group globally. This is responsible for 12% to 15% of surgical admission due to acute abdomen. Obstruction to gastrointestinal tract can occur at all labels but it is small intestine which more commonly involved. To improve the outcome early diagnosis and management is essential. Present study has been designed to study the epidemiology, demography and clinical presentation of acute intestinal obstruction and to study the complications and outcome of surgical management of acute intestinal obstruction.

**Methods:** In present study patients admitted with diagnosis of acute intestinal obstruction during study period were enrolled for this study as per inclusion and exclusion criteria. As per that 126 patients were enrolled for this study. Case record of all patients were closely reviewed and analysed thoroughly.

**Results:** The mean age of the patients was  $54.64 \pm 12.93$  years. The acute intestinal obstruction was more common in 41 to 60 years of age group that is (44.45%). Regarding etiology of acute intestinal obstruction 44.45% patient adhesion was the etiology of obstruction. Resection of adhesion was most common procedure done for removal of obstruction (42.85%).

**Conclusions:** Adhesion was most common etiology and pain abdomen and tachycardia was common presentation. Regarding management of obstruction resection of adhesion was most common procedure done for removal of obstruction. Infection of wound was common complication.

**Keywords:** Acute intestinal obstruction, Adhesion, Treatment outcome

### INTRODUCTION

The intestinal obstruction is a common potentially risky surgical emergency in all age group globally. This is responsible for 12 % to 15 % of surgical admission due to acute abdomen. Obstruction to gastrointestinal tract can occur at all labels but it is small intestine which more commonly involved.

To improve the outcome early diagnosis and management is essential. Aetiology of obstruction used to vary from one region to other but collectively intestinal adhesion, hernias, intussusceptions and volvulus are responsible for 80% of cases while tumour and malignancy responsible for 20 % of cases.<sup>1-3</sup> With the improvement in quality of care, better surgical technique and accurate diagnostic modalities outcome of surgical management has improved.

Various studies are available regarding aetiology of intestinal obstruction and its outcome. Adhikari S et al from east India has reported that has reported that obstructed and strangulated hernia are the major aetiology for intestinal obstruction and complications in the postoperative period occurred in 25.89% patients.<sup>4</sup> Mariam TG et al from Ethiopia has concluded that 16.7% of all cases have unfavorable surgical management outcomes of intestinal obstruction.<sup>5</sup> Soressa U et al has concluded from his study that Intussusceptions and sigmoid volvulus are common cause of acute intestinal obstruction.<sup>6</sup> He has further reported that 24.6% developed an unfavourable outcome. From above literature evaluation it is clear that there is variability in the clinicoepidemiology and management of acute intestinal obstruction in various studies.

Present study has been designed to study the epidemiology, demography and clinical presentation of acute intestinal obstruction and to study the complications and outcome of surgical management of acute intestinal obstruction.

## METHODS

Present study is a record based cross sectional study was carried out in the Department of general surgery in Konaseema Institute of Medical Science, Amalapuram a tertiary care teaching hospital in the south-eastern part of India, in the state of Andhra Pradesh during the period from February 2017 to August 2020.

This study is approved by institutional ethics committee .As this study is a retrospective evaluation of existing data waiver of informed consent of the study participants was obtained from Ethics Committee.

### Selection of patients

For the present study we were used convenience sampling technique for enrolment the study participants. All the cases of acute intestinal obstruction during the period of the study were included as per the inclusion and exclusion criteria.

### Inclusion criteria

Patients age between 18 to 70 years both sex was included in this study. Patients with clinically, haematologically and radiologically confirmed acute intestinal obstruction were included.

### Exclusion criteria

Patients with previous of history surgical procedure for acute intestinal obstruction and known case of uncontrolled diabetes mellitus, cardiovascular abnormalities.

## Procedure

In present study patients admitted with diagnosis of acute intestinal obstruction during study period were enrolled for this study as per inclusion and exclusion criteria. As per that 126 patients were enrolled for this study. Case record of all patients were closely reviewed and analysed thoroughly. Details regarding demography of patients, clinical finding and radiological finding which were used in making the diagnosis of acute intestinal obstruction were recorded. Detailed analysis of progress of patients during post-operative period based on case record was done. Patient developed any complication and overall outcome of patient were recorded.

## Statistical analysis

Data were recorded in excel sheet and statistical Analysis was done with software SPSS-14 version. Data were calculated as percentage and proportions.

## RESULTS

In this study case record of 126 patients with acute intestinal obstruction was analysed. As per Table 1, the mean age of the patients was  $54.64 \pm 12.93$  years. The acute intestinal obstruction was more common in 41 to 60 years of age group that is (44.45%). In present study 26.98% patients more than 60 years of age developed acute intestinal obstruction. Only 4.76% patients were below 20 years of age and 23.80% patients were between 21 to 40 years of age. There was male predominance (58.73% vs 41.26%).

**Table 1: Demography of patients.**

Variable		Number	Percentage
Age (mean = $54.64 \pm 12.93$ years)	Less than 20	6	4.76
	21 to 40	30	23.80
	41 to 60	56	44.45
	More than 61	34	26.98
sex	M	74	58.73
	F	52	41.26

**Table 2: Clinical presentation of patients with acute intestinal obstruction.**

Clinical presentation	Number	Percentage
Pain abdomen	96	76.16
Vomiting	66	52.38
Constipation	44	34.92
Distension	67	53.17
Tenderness	45	35.71
Rigidity	44	34.92
Visible peristalsis	78	61.90
Mass	32	25.39

As per Table 2 pain abdomen was most common symptom which was present in 76.16% patients, vomiting

was present in 52.28% patients. Constipation was presenting symptom in 34.92% patients. In 53.17% patients abdomen was distended, tenderness and rigidity was present in 35.71% and 34.92% patients respectively. Visible peristalsis was present in 61.9% patients and 25.39% patients were presented with mass.

**Table 3: Etiology of acute intestinal obstruction.**

Etiology	Number	Percentage
Adhesion	56	44.45
Obstructed Hernia	34	26.98
Abdominal tuberculosis	12	9.5
Tachycardia	118	93.6
Intussusceptions	4	3.17
Malignancy	12	9.52
Volvulus	4	3.17

Regarding etiology of acute intestinal obstruction 44.45% patient adhesion was the etiology of obstruction. Strangulated hernia was next common cause of obstruction that is 26.98%. Abdominal tuberculosis was cause of obstruction in 9.5% patients. Volvulus and intussusception was less common present in 3.17% patients. Malignancy was present in 9.52% patients.

**Table 4: Management of acute intestinal obstruction.**

Management	Number	Percentage
Resection of adhesion	54	42.85
Resection and anastomosis	28	22.23
Hernioplasty	14	11.12
Reduction	4	3.17
Release of adhesion with herniorrhaphy	26	20.63

Regarding management of obstruction resection of adhesion was most common procedure done for removal of obstruction (42.85%). Resection and anastomosis was done in 22.23% patients. Hernioplasty was done in 11.12% patients. In 3.17% patients the obstruction was reduced. Release of adhesion with herniorrhaphy was done in 20.63% patients.

**Table 5: Post-operative complications of acute intestinal obstruction.**

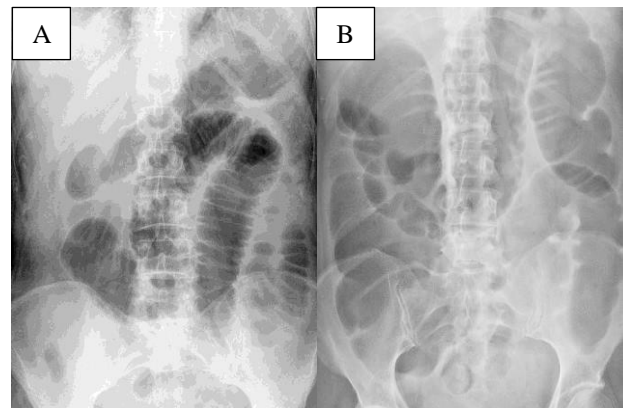
Complications	Number	Percentage
Wound infection	12	9.52
Septicaemia	2	1.58
Wound dehiscence	1	0.79
fistula	0	

Infection of wound was common complication which was present in 9.52% patients. Septicaemia was found in 1.58% patients. Wound dehiscence was found in one patient.

**Table 6: Outcome of acute intestinal obstruction.**

Outcome		Number	Percentage
Recovered		124	98.41
Death		2	1.58
Duration of stay in hospital	Less than one week	82	65.07
	One to two week	26	20.63
	More than two week	18	14.28

Regarding outcome of management of acute intestinal obstruction 98.41% patients were recovered and out of 126 patients 2 patients expired. Duration of stay in hospital was less than one week in 65.07% patients, one to two weeks in 20.63% and more than two week in 14.28%.



**Figure 1: Radiology of small and large bowel obstruction.**

## DISCUSSION

Acute intestinal obstruction is a common surgical emergency and despite of improvement in management of it mortality rate in the treatment of such obstructions remains discouragingly high Berry R et al.<sup>7</sup> Lee MJ et al and Stewart B et al has reported that acute intestinal obstruction is responsible for 1.8 deaths per 100 000 population per year.<sup>8,9</sup> In present study we have evaluated the clinicoepidemiology and treatment outcome of acute intestinal obstruction in adult in KIMS Amalapuram. In our study we have observed that acute intestinal obstruction was most common in 5<sup>th</sup> and 6<sup>th</sup> decade of life and there is male predominance. Adhikari S et al has reported that it is more common in 5<sup>th</sup> to 7<sup>th</sup> decade with male predominance but mean age was 41.27 years. This supports our study but mean age in our study is 54.64±12.93 years.<sup>4</sup>

Kirubakaran B et al has reported from south India that more than 60 years of age group was the most commonly affected and there is female predominance this does not support our study.<sup>10</sup> In our study pain abdomen was most common symptom and tachycardia was most common

sign and present in 93.6% patients. Adhesion was most common cause of obstruction. Study of Markogiannakis H et al and Catena F et al support our study.<sup>11,12</sup> Regarding management of obstruction resection of adhesion was most common procedure done for removal of obstruction (42.85%). Resection and anastomosis was done in 22.23% patients. Type of surgical procedure depends upon the etiology of adhesion.

Ohene-Yeboah M et al has report that strangulated hernia was the most common cause of obstruction so he has recommended that elective repair of hernias have the potential to remove a preventable cause of intestinal obstruction and thus reduce the associated high mortality.<sup>13</sup> Ojo EO et al has reported that adhesion was common etiology and resection of adhesion was common surgical procedure which support our study.<sup>14</sup> Adhikari S et al has concluded that wound infection was common complication which support our study but mortality was higher than our study that is 7.35% vs 1.58%.<sup>4</sup> Goussous N et al has reported that duration of stay in hospital was 7 to 15 days which support our study.<sup>15</sup>

## CONCLUSION

From our study we can conclude that the acute intestinal obstruction was more common in 41 to 60 years of age group and there is female predominance. Adhesion was most common etiology and pain abdomen and tachycardia was common presentation. Regarding management of obstruction resection of adhesion was most common procedure done for removal of obstruction. Infection of wound was common complication.

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