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Incidence of acute intestinal obstruction in adults in eastern India

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Abstract
This observational study was conducted in rural based medical college of Bihar, during the period September 2014 to June 2015. The aim was to know the prevalence and other related aspects of acute intestinal obstruction in adults. Out of 3192 patients, 41 adults with acute intestinal obstruction were admitted for management. Majority of the patients were between 30 – 60 yrs with a maximum incidence in 5th decade of life. Male outnumbered females. Most of the cases belong to Muslim community and were non vegetarian. Patients addicted to smoking, alcohol, chewing tobacco was the worst sufferer. Majority of the patients presented between 2-4 day with the commonest complain of vomiting and abdominal distension followed by abdominal pain. Dehydration and abdominal tenderness were recorded in most of the cases. The site of obstruction was in small intestine in maximum cases. Adhesion was 6the most common aetiological factor and the nature of obstruction was simple in most cases. Mortality rate was only 9.8%with a higher prevalence in cases with peritonitis and perforation.

Keywords: prevalence, intestinal, adults, eastern India

Introduction
Acute intestinal obstruction is the commonest life threatening emergencies all around the world requiring emergency management. It occurs when there is interruption in the forward flow of the intestinal contents. This interruption can occur at any point along the length of the gastrointestinal tract i.e. small bowel or large bowel obstruction. Based on nature, severity, location and aetiology several terms are used to describe bowel obstruction e.g. functional or dynamic (due to abnormal intestinal pathology) and mechanical or adynamic (acute or chronic).

Table 1: Causes of Intestinal obstruction

Dynamic			Adynamic
Intramural	Intaluminal	Extramural	
Impaction Foreign Bodies Bezoars Gallstones	Stricture Malignancy	Bands/Adhesion Hernia Volvulus Intussusception	Paralytic ileus Pseudo obstruct Mesentric vascular occlusion

Simple mechanical obstruction is the compromise of lumen of bowel without compromise of its vascular supply. In simple obstruction important and progressive changes take place in the bacteriologic content of obstructed bowel, in the amount and composition of gas in the gut above obstruction, in circulation in the distended bowel and in the complex fluid and electrolyte fluxes that takes place across it. When strangulation complicates the picture, these pathological changes are compounded by the progressive vascular changes in the affected intestine and its mesentery and eventually lead to toxaemia associated with actual death of gut wall. In the initial stage, distension is mainly gaseous as there is significant overgrowth of both aerobic and anaerobic organisms resulting in considerable gas production. The largest sum of intestinal gas is swallowed air. Nitrogen is the major constituent (90%) followed by hydrogen sulphide.

Fluid accumulates above the level of obstruction partly because of deprivation of absorptive surface of the intestine distal to the occlusion and partly due to alteration in fluid and electrolytes across gut wall above the obstruction.

Every 24 hour approximately 7 to 8 litres of gastric, biliary, pancreatic and small intestinal secretions pour into the alimentary canal to be almost completely absorbed in the colon. Because of oedema and inflammation absorption decreases, sequestration of fluid from the circulation into the lumen occurs and bacteria multiply, toxins are released hence toxaemia occurs. This leads to severe dehydration and electrolytic imbalance.

The mainstay of treatment in intestinal obstruction includes gastro duodenal suction, intravenous fluid administration and operative correction.

Materials and Methods
The present study was done in general surgery department of MGM Medical College& LSK Hospital, kishanganj, Bihar, between January 2014 to June 2015. The material includes 41 cases of Acute intestinal obstruction in adult patients operated in MGM Medical College and LSK Hospital, Kishanganj, Bihar. Only acute cases treated surgically and diagnosis of obstruction proved at time of operation is included in this series. Following were excluded in the study.

1. Patients with external hernia in which only omentum was found.
2. Patient with a dynamic or post operative items.

Emphasis was placed upon determining the exact duration of obstruction and previous treatment including fluid therapy received prior to admission. The onset of abdominal pain was taken as criteria of onset of obstruction.

Observations
The following observations were recorded:

1. Incidence
Altogether 3192 patients of acute abdomen were admitted in surgical ward out of which 41 patients of acute intestinal obstruction were operated. Paediatric patients were excluded from this study.Though actual data of patients admitted for acute intestinal obstruction was not available. However the percentage of operated patients of acute intestinal obstruction was 1.28%

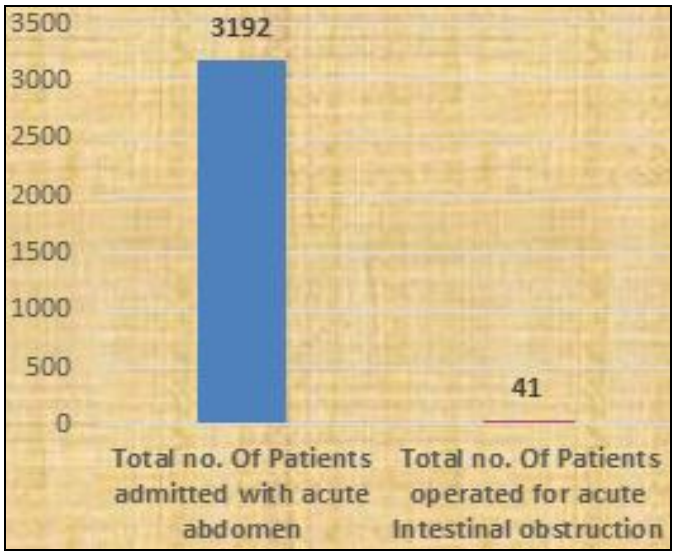

Fig 1: Incidence of operated patients of acute Intestinal obstruction.

2. Age Incidence
The age varies from 16 years to 74 years with mean average age of 45 years. Majority of the patients were between 30-60 years of age (70.6%) with maximum incidence in 5th decade of life (36.6%)

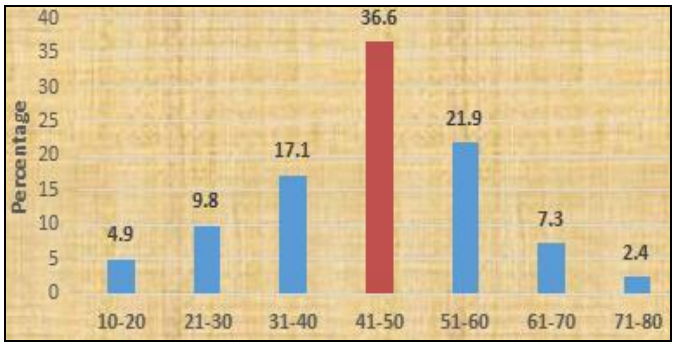

Fig 2: Age incidence in acute intestinal obstruction (operated)

3. Sex Incidence
Out of 41 operated patients of acute Intestinal obstruction, 27 cases (65.9%) were male. Male to female ratio in this series was approximately 2:1.

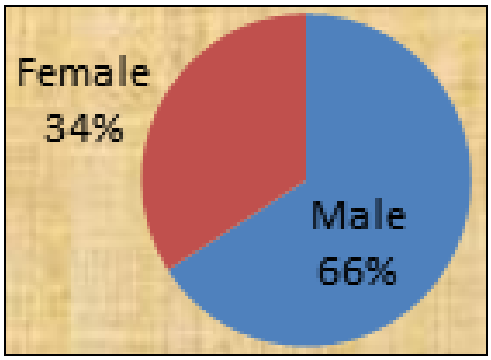

Fig 3: Sex Incidence

4. Incidence in relation to religion
Majority of the patients belonged to muslim community (63.4%)

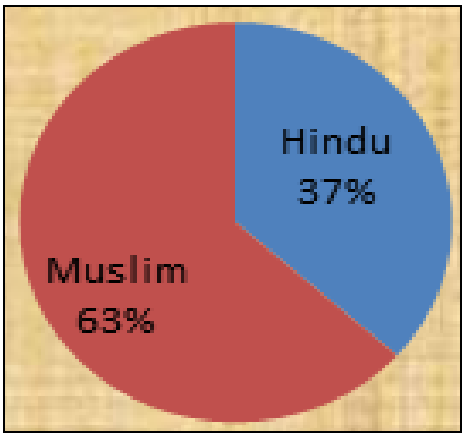

Fig 4: Incidence in relation to religion

5. Incidence in relation to socioeconomic status
Maximum patients belonged to low socioeconomic group (68.3%) only a few cases were recorded in high income group (4.9%).

Incidence in relation to socioeconomic status

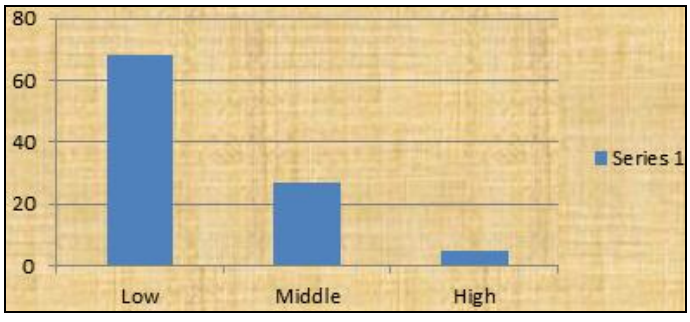

Fig 5: Socioeconomic status

6. Incidence in relation to food habbit.
Maximum cases (65.9%) were non-vegeterian.

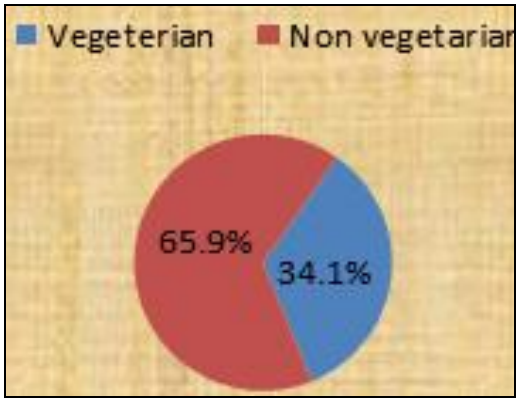

Fig 6: Food habits

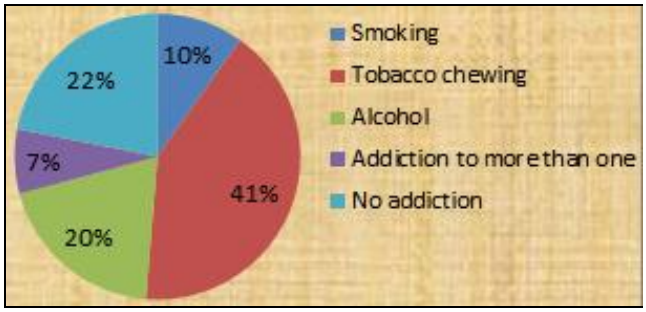

Fig 7: Personal habbit

7. Incidence in relation to personal habit

Maximum number of patients (41.5%) were having habbit of tobacco chewing, followed by patients having no addiction habbit (21.9%)

8. Incidence of Presentation of important symptoms

Copious vomiting & abdominal distension were the most common symptoms(95.5%) followed by pain abdomen (92.7%) and constipation in (90.2%) of cases, out of which 75.7% were of absolute and 24.3% were relative constipation. 75.6% patients complained of fever while anorexia and weight loss was noted in 70.7% and 58.5% cases respectively.

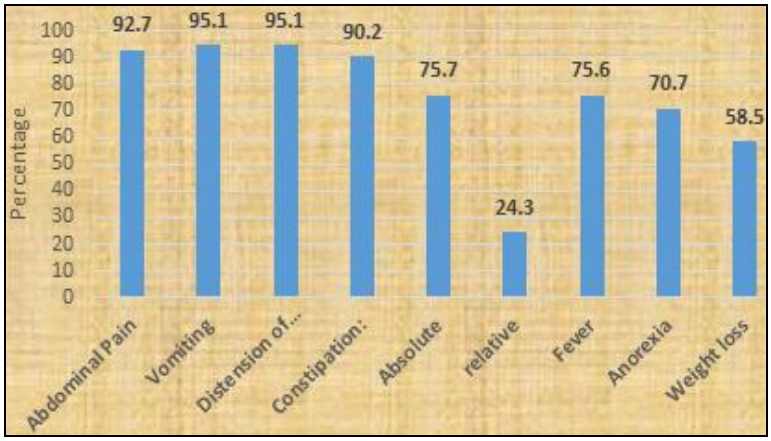

Fig 8: Presentation of important symptoms

9. Incidence of common signs at the time of presentation

Abdominal tenderness and dehydration were present in most of the cases (95.1%) followed by features of shock (68.2%) and emaciation 60.1%. Visible peristalsis was noted in 19.5 % while succussion splash was noted in 12.2% of cases. Hard irregular lump of different size were observed in 9.8 % and 12.2% were mentally confused at the time of admission.

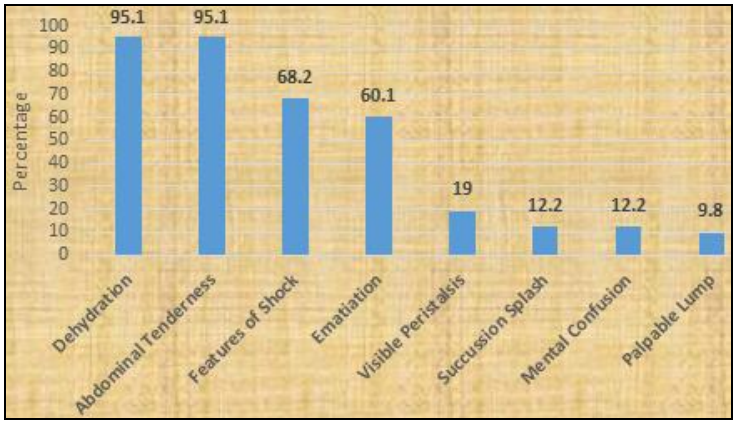

Fig 9: common signs at the time of presentation

10. Incidence of obstructive symptoms prior to admission

Majority of the patients presented between 2nd to 5th day (65.8%). The maximum duration of presentation was on 3rd day (29.2%). Most of the cases with late presentation had received treatment from outside, hence were relatively in stable condition.

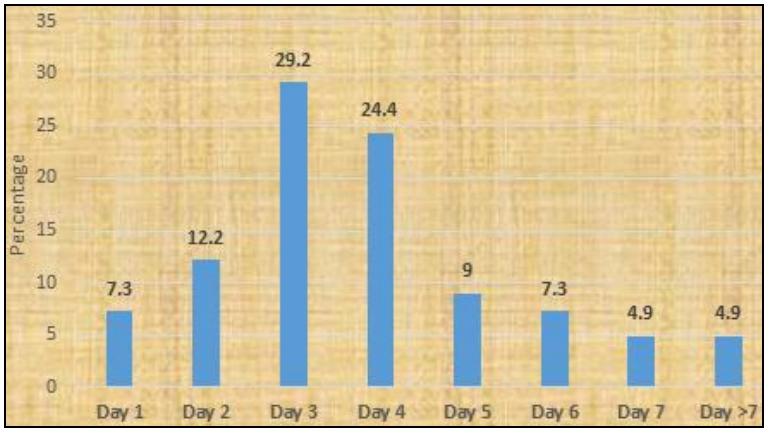

Fig 10: obstructive symptoms prior to admission

11. Incidence related to the site of obstruction

In the present series the site of obstruction was in small intistine in majority of cases (85.4%), while in large intestine it was found to be 15.6%.

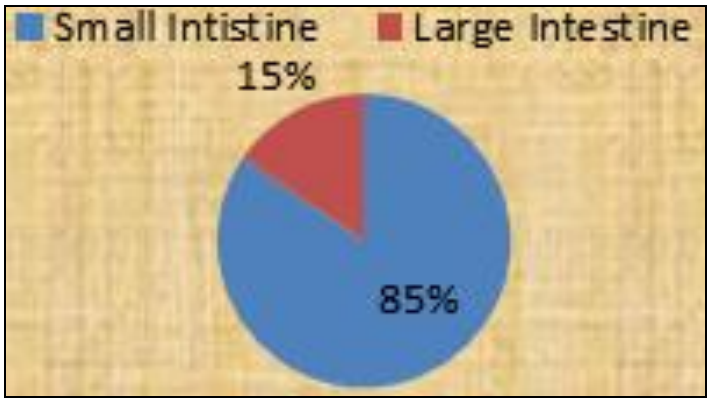

Fig 11: Site of obstruction

12. Incidence based on Aetiology

In the present series depending upon aetiology, obstruction due to adhesion is responsible in majority of cases (65.9%), out of which post opreative adhesion forms the largest group 62.9%) followed by inflammatory (29.6%) and congenital band (7.5%).

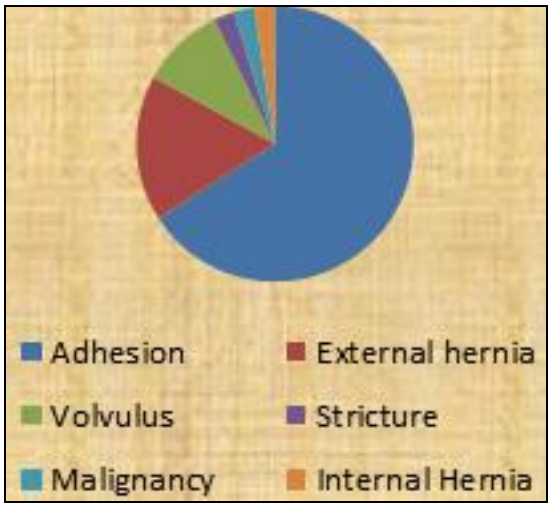

Fig 12

13. Incidence on the basis of intraoperative pathology

In the present study it was observed that in maximum number of cases, obstruction was simple (68.3%). 19.5 % of cases presented with gangrene while perforation and peritonitis were observed in 12.2% cases.

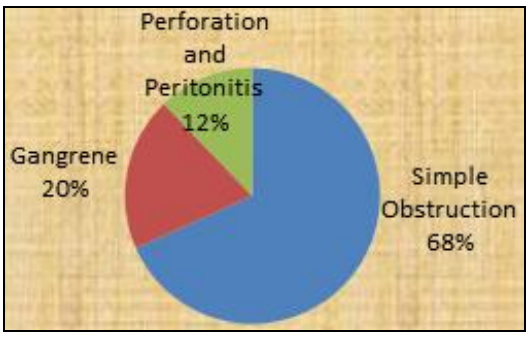

Fig 13: Intraoperative pathology

Discussion

Present study revealed 1.28% of intestinal obstruction of all surgical admission. Wagensteem reported 1% of total surgical admission. Majority of the patients in the present study were between 30-60 years (75.6%), with maximum incidence in 5th decade of life (36.6%). Arshad M. Mallick *et al.* (2010) & Foster N.M (2006) also found the similar results in their study. In this series 65.9% of cases were male, with a male to female ratio 2:1 approximately. Arshad M. Mallick also found that male constitute 74%. Maximum number of cases belonged to low socio economic group (68.3%).This may be due to the fact that these people were either underfed or malnourished. Majority of patients were non-vegetarian (65.9%) & (41.5%) had the habit of chewing tobacco. Remarkably 21.9% of cases had no addiction. Vomiting and abdominal distension (95.1%) were the most common complaint on presentation, followed by abdominal pain (92.7%) and constipation (90.2%). Arshad M. Mallick (2010) in his study also found that the most common features on presentation was distention of abdomen (87%), vomiting (73%) and absolute constipation(88%). Dehydration and abdominal tenderness were recorded in most of the cases (95.1%) followed by features of shock (68.2%) and emaciation (60.1%). Arshad M. Mallick also noted pain in abdomen in 75% of cases and dehydration in 67% of the cases. Most of the patients presented between 2nd to 4th day (65.8%).There where 4 deaths in this group. With delayed presentation the mortality and morbidity is expected to be high. The site of obstruction in majority of cases was in small intestine(85.4%). Adhesion was the most common aetiological factor (65.9%). Similar findings were noted by Ellis. H & Arshad m mallik. In most of the case obstruction was simple 68.3%). Gangrene was noted in 19.5% of cases. While perforation and pertonitis were seen in only 12.2% of cases.

Conclusion

Acute intestinal obstruction is a major cause of mortality with adhesions being the most common cause. High quality surgical expertise coupled with sound clinical judgment and early surgery when needed will greatly improve survival.

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