

## Original Research Article

# Incidence of appendicitis and ovarian cyst among female patients presenting with acute abdomen at a tertiary care hospital

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### ABSTRACT

**Background:** Physicians working in casualty are often confronted with acute abdomen and get much more bothered as the diagnosis is not easy. This is due to the fact that the etiology of acute abdomen is always much diversified and the classical findings are masked making the diagnosis difficult. Objective was to study incidence of appendicitis and ovarian cyst among female patients presenting with acute abdomen.

**Methods:** A hospital based follow up study was carried out among 64 cases presented with acute abdomen to the casualty from January 2018 to August 2018. All necessary investigations were done to confirm the etiology of acute abdomen. The cases belonged to surgery and gynecology departments where they were operated. The patients were followed from admission in the casualty to the final outcome. The data was analyzed using proportions.

**Results:** During the study period a total of 15413 patients were admitted in the casualty out of them, 64 (0.42%) presented with acute abdomen. Of these 64 cases, majority i.e. 35 (54.7%) were due to acute appendicitis; 13 cases were due to renal colic and eight cases each were due to ectopic pregnancy and ovarian cyst. The most common age group affected was 21-30 years (62.5%) followed by less than 20 years age (21.9%). 25% of the 64 cases had delayed wound healing and no other complications were reported. No death was recorded.

**Conclusions:** Authors achieved excellent results as there were no major complications and no death was recorded. Thus, meticulous diagnosis and prompt treatment can save patient life and at the same time rate of complications can be reduced.

**Keywords:** Acute abdomen, Complications, Follow up, Surgery, Ovarian cyst

### INTRODUCTION

Among all the causes with which the patients present to casualty, acute abdomen constitutes around 5-10% of all such cases making it an important clinical emergency entity.<sup>1</sup> Physicians working in casualty are often confronted with acute abdomen and get much more bothered as the diagnosis is not easy. This is due to the fact that the etiology of acute abdomen is always much diversified and the classical findings are masked making the diagnosis difficult. The causes can range from mild or

negligent to such causes as they can threaten the life of the patient. The etiology may get referral to any department of the hospital like obstetrics and gynecology department for those having conditions like ovarian cyst or ectopic pregnancy etc, surgery department for those having acute appendicitis etc. Despite doing the thorough evaluation of the patients with acute abdomen, around 25% of the cases remain with non specific diagnosis.<sup>2</sup>

The classical symptoms of acute abdomen are more pronounced among the young patients compared to the

elderly patients. Among the elderly patients, instead of acute pain, they may present with pain of long duration.<sup>3</sup>

Acute abdomen is commonly seen in the casualty admissions. Therefore, the casualty doctors must be aware of the most common causes of acute abdomen so that they are in a position to diagnose and treat and give best of the relief to the patients with acute abdomen who come to the casualty thus increasing the possibility of early discharge of such patients.<sup>4</sup>

Pain in the right iliac fossa is the most common presentation among females of reproductive age group which is generally considered to be between 15-45 years. Not all of them will have appendicitis. Thus, careful evaluation can avoid unnecessary investigations as well as surgeries among such cases. In some cases only careful observation may be sufficient.<sup>5</sup>

When the patients come to the casualty with complaint of acute abdomen and the physician finds that the patient is not having classical symptoms, then in such cases the best strategy is to observe the patient and wait. But in some cases when the patient is presenting with non specific symptoms, this strategy may risk the life of the patient. Such patients may develop hemorrhage, peritonitis or infertility.<sup>6</sup>

As discussed above, it is quite difficult to have a proper diagnosis based on clinical signs and symptoms. But now days with the advents in the health care use of USG, CT scan etc can help improve diagnosis.<sup>7</sup>

Hence present study was carried out to study incidence of appendicitis and ovarian cyst among female patients presenting with acute abdomen.

## METHODS

Present study was hospital based follow up studies. Present study was carried out at Department of Surgery and Department of Obstetrics and Gynecology, Government Medical College, Mahabubnagar. The study was carried out from January 2018 to August 2018. Consent from patient and patient relative was obtained.

### Sample size

During the study period a total of 15413 casualty admissions took place. Out of them 64 cases were of acute abdomen. All were studied as they consented to be part of this study and were found eligible for the present study.

### Methodology

From January 2018 to August 2018 a total of 15413 patients were admitted in the casualty. Out of this, 64 cases presented with acute abdomen.

All patients were thoroughly evaluated. Detailed clinical history and complete physical examination was carried out. All findings including name, age, sex etc were recorded.

Complete blood picture, complete urine examination, X ray abdomen standing was carried out for all 64 patients. They were also subjected to ultrasonography and CT scan of the abdomen in doubtful cases.

All patients undergone emergency surgeries based on the etiology in the departments of surgery and gynecology. Postoperative complications were noted. Once the patient was completely alright, she was discharged. The data was analyzed using proportions.

## RESULTS

All eight months recorded almost similar admissions in the casualty ranging from minimum of 11.2% in the month of June 2018 to highest of 13.8% in the month of July 2018. A total of 15413 admissions took place during the study period (Table 1).

**Table 1: Month wise admissions of cases to casualty from January 2018 to August 2018.**

Month	Number	%
January	1926	12.5
February	1935	12.6
March	1933	12.5
April	1997	12.9
May	1833	11.9
June	1729	11.2
July	2124	13.8
August	1936	12.6
Total	15413	100

During the study period of eight months, a total of 15413 admissions took place. Out of these 15413 cases admitted in the casualty of Government Medical College, Mahabubnagar; 64 i.e. 0.41% presented with acute abdomen. These 64 cases formed the study group in the present study (Table 2).

**Table 2: Incidence of acute abdomen.**

Acute abdomen	Number	%
Yes	64	0.41
No	15349	99.59
Total	15413	100

Of the 64 cases with acute abdomen, majority i.e. 35 (54.7%) were due to acute appendicitis. This was followed by renal colic due to calculi in 13 (20.3%) cases. There was a total of 16 gynecology cases out of which 8 cases were due to ectopic pregnancy and 8 cases were due to ovarian cyst (Table 3).

**Table 3: Etiology of acute abdomen.**

Etiology	Number	%
Acute appendicitis	35	54.7
Ectopic pregnancy	08	12.5
Ovarian cyst	08	12.5
Renal calculi	13	20.3
Total	64	100

Majority of the cases belonged to the age group of 21-30 years i.e. 40 cases (62.5%). Almost 14 cases i.e. 21.9% belonged to the age group of less than 20 years. Seven cases belonged to the age group of 31-40 years and only three cases belonged to the age group of 41-50 years. Thus, incidence of acute abdomen was most common in the young age group constituting a total of 84.4% of the cases (Table 4).

**Table 4: Age wise distribution of acute abdomen cases.**

Age (years)	Number	%
< 20	14	21.9
21-30	40	62.5
31-40	07	10.9
41-50	03	10.7
Total	64	100

All cases were operated in the surgery and Gynecology departments. Only 16 (25%) had delayed wound healing which was resolved with prompt care. No one was having any major complication. No death occurred. Thus, making the management of acute abdomen the most successful (Table 5).

**Table 5: Complications post operative and outcome among acute abdomen cases.**

Complications/outcome	Number	%
Delayed healing	16	25
No post operative complications	48	75
Death	0	0
Total	64	100

**Table 6: Etiology wise complications.**

Etiology	Post-operative complications	Number	%
Acute appendicitis	Yes	10	28.6
	no	25	71.4
Ectopic pregnancy	Yes	6	75
	No	2	25
Ovarian cyst	Yes	0	0
	No	8	100
Renal calculi	Yes	0	0
	No	13	100

When etiology wise complications were analyzed, it was found that the complication rate of delayed wound healing was most common in ectopic pregnancy cases. It was nil in the cases of ovarian cyst as well as in the cases of renal calculi; while it was 25% in the cases of acute appendicitis (Table 6).

**DISCUSSION**

The incidence of acute abdomen was very low (0.41%). This low incidence may be due to the fact that only female patients were included in the present study.

Around 84.4% of the cases were younger than 30 years in the present study. Chanana L et al, in their study also found that 55.6% of the cases were younger and they belonged to the age group of 15-40 years.<sup>8</sup> The authors also found that males were more affected than females. But the present study was done exclusively among females. In the authors study majority had acute pain abdomen history. More than half had sudden onset, dull type of the pain abdomen. Lower abdomen was the pain site in 45.8% of the cases. The authors found that the incidence of acute appendicitis was 10.6% while we found that it was high at 54.7%. The authors reported a death rate of 2.3% while it was nil in the present study.<sup>8</sup> The authors concluded that multiple diagnoses should be considered while dealing with acute abdomen cases.<sup>8</sup>

Abbas SH et al, studied 286 cases who were admitted to the emergency department.<sup>9</sup> They applied logistic regression multivariate statistical analysis and found that certain factors like presence of guarding, vomiting, increased heart rate, increased count of white blood cells were predictors of the underlying morbidity. The authors concluded that in the absence of these signs, the patient may not require any interventions of either surgical or medical.<sup>9</sup>

Morino M et al, studied similar to the present study 508 female patients.<sup>10</sup> They evaluated the need for laparoscopy compared to the careful observation and intervention only in certain indicated cases. They formed two similar groups and one group was operated while the other group was carefully observed. In the observation group, only 39.2% required surgery as the signs and symptoms warranted to do so. Acute appendicitis incidence was 30.1% which is lower than that we found. Recurrence of the abdominal pain was significantly more in the observation group than the lap group. But the authors concluded that observation is as good as surgical intervention.<sup>10</sup>

Staniland JR et al, in their study of 600 patients of acute abdomen found that 66% had classical features of acute abdomen and the remaining were not found to have classical features of acute abdomen.<sup>11</sup> Thus, the authors concluded that clinical diagnosis may not be effective 30% of the cases.<sup>11</sup>

Gajjar R et al, found that 52% were young patients which are similar to the finding of the present study.<sup>12</sup> 63% were males. Sudden onset of the pain was seen in 64% of the cases. Generalized pain was present in 40% of the patients. Radiating pain was not seen in 80% of the cases. Nausea was present in 56% of the cases. Vomiting was present in the 42% of the cases. Urinary symptoms were seen in 18% of the cases. The gynecological cases comprised only 3% while in the present study this rate was 25%. The authors found that ureteric colic was most common while we found that acute appendicitis was the most common in 54.7% of the cases.<sup>12</sup>

Rama Rao P et al, studied all female patients which is similar to the present study where we also studied all female patients.<sup>13</sup> They concluded that acute appendicitis was the most common etiological diagnosis which is similar to the findings of the present study where we also found that acute appendicitis was the most common etiological diagnosis. The authors also found that the most common age group affected was 21-30 years which is again similar to the findings of the present study where we also found that the most common age group affected was 21-30 years.<sup>13</sup>

Caterino S et al, carried out a retrospective study among 450 cases with acute abdomen.<sup>14</sup> They tried to identify the most common causes of acute abdomen. They found that the acute appendicitis was the most common (16.4%) etiological diagnosis which is similar to the findings of the present study where we also found that acute appendicitis was the most common (54.7%) etiological diagnosis. But our rate was almost three times their rate. The authors reported a death rate of 4.2% whereas in our study no deaths occurred.<sup>14</sup>

## CONCLUSION

Acute appendicitis was the most common cause of acute abdomen in the present study. Younger age group was most commonly affected. Some 25% of the cases were attributed to the gynecological etiology like ectopic pregnancy and ovarian cyst. Thus, among females younger age and acute appendicitis forms the most common group of acute abdomen and thus this study throws a considerable guiding light for the new casualty doctors.

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## REFERENCES

1. Kamin RA, Nowicki TA, Courtney DS, Powers RD. Pearls and pitfalls in the emergency department

- evaluation of abdominal pain. Emerg Med Clin North Am. 2003 Feb;21(1):61-72.
2. Powers RD, Guertler AT. Abdominal pain in the ED: stability and change over 20 years. Am J Emerg Med. 1995 May;13(3):301-3.
3. Abbas SM, Smithers T, Truter E. What clinical and laboratory parameters determine significant intra abdominal pathology for patients assessed in hospital with acute abdominal pain? World J Emerg Surg. 2007 Sep 25;2(1):26.
4. Bjerkeset T, Havik S, Aune KE, Rosseland A. Acute abdominal pain as cause of hospitalisation. Tidsskr Nor Laegeforen. 2006 Jun 8;126(12):1602-4.
5. Rennie AT, Tytherleigh MG, Theodoroupolou K, Farouk R. A prospective audit of 300 consecutive young women with an acute presentation of right iliac fossa pain. Ann R Coll Surg Engl. 2006 Mar;88(2):140-3.
6. Paterson-Brown S. Emergency laparoscopic surgery. Br J Surg. 1993 Mar;80(3):279-83.
7. Decadt B, Sussman L, Lewis MP, Secker A, Cohen L, Rogers C. Randomized clinical trial of early laparoscopy in the management of acute non-specific abdominal pain. Br J Surg. 1999 Nov;86(11):1383-6.
8. Chanana L, Jegraj MAK, Kalyaniwala K, Yadav B, Abilash K. Clinical profile of non-traumatic acute abdominal pain presenting to an adult emergency department. J Family Med Prim Care. 2015;4(3):422-5.
9. Abbas SM, Smithers T, Truter E. What clinical and laboratory parameters determine significant intra abdominal pathology for patients assessed in hospital with acute abdominal pain? World J Emerg Surg. 2007;2:26.
10. Morino M, Pellegrino L, Castagna E, Farinella E, Mao P. Acute nonspecific abdominal pain: a randomized, controlled trial comparing early laparoscopy versus clinical observation. Ann Surg. 2006;244(6):881-8.
11. Staniland JR, Ditchburn J, de Dombal FT. Clinical presentation of acute abdomen: study of 600 patients. Br Med J. 1972;3(5823):393-8.
12. Gajjar R, Gupta PB, Verma D Gouda B. Pattern and presentation of non-traumatic acute abdominal pain to an emergency department of a tertiary care hospital. Int J Health Sci Res. 2017;7(5):17-22.
13. Rama Rao P, Chakravarthy GR, Sufiya S, Kumar BA, Kassin K. A clinical study of non traumatic acute abdomen in female patients. (IOSR-JDMS). 2017;16(3):34-47.
14. Caterino S, Cavallini M, Meli C, Murante G, Schiffino L, Lotito S, et al. Acute abdominal pain in emergency surgery. Clinical epidemiologic study of 450 patients. Ann Ital Chir. 1997;68:807-17.

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