

## Evaluation of CT Abdomen findings in Patients with Acute Abdomen at a Tertiary Care Teaching Hospital

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### ABSTRACT

**Aim:** The objective of the study is to evaluate the CT findings of abdomen in patients with Acute Abdomen in a known population.

**Material and Methods:** A study was conducted to evaluate the CT findings of abdomen in patients with Acute Abdomen in a known population. Sample size was chosen as 200. Detailed history and thorough physical examination findings were recorded. Routine investigations namely Hb%, TC, DC, ESR, urine routine was carried out. The radiological investigations comprised of plain CT scan. Statistical analysis was done by using computer-based SPSS-20.0 software programme. P value <0.05 was considered as the level of significance.

**Result:** The total sample was 200 in which the gender distribution was 127 (63.5%) were males, 73 (36.5%) were females. According to the results of our study the common cause of abdomen pain in both males and females was acute appendicitis. The results CT findings of abdomen show that true positive cases in males were 68 whereas in females 42 cases were true positive.

**Conclusion:** Careful history, physical examination and laboratory examinations may lead us to determine the specific diagnosis in patients with acute abdominal pain. Therefore, the clinical and radiological findings are equally important.


**Keywords:** Abdomen, CT Scan, Acute Appendicitis.

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### Article History:

Received: 28-09-2017, Revised: 21-10-2017, Accepted: 14-11-2017

Access this article online	
Website: <a href="http://www.ijmrp.com">www.ijmrp.com</a>	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.6.115	

### INTRODUCTION

Acute abdomen pertains to severe abdominal pain developing suddenly or over a period of several hours and constitutes a significant percentage of emergency admissions. A long list of differential diagnosis is encompassed within it, which poses one of the greatest challenges to a clinician.<sup>1</sup> For any reason, approximately half of the patients admitted to the emergency service also complain about abdominal pain. Approximately 5-10% of all patients admitted to the emergency room have abdominal pain. Approximately 20 to 25% of patients suffering from abdominal pain are patients requiring emergency hospitalization in the hospital, while the 35-40% of the examinations were not found, no pathology, no known abdominal pain forms and often passed spontaneously nonspecific abdomen creates painful patients.<sup>2,3</sup> A wide spectrum of conditions, ranging from a benign and self-limiting disease to a surgical emergency, can cause acute abdomen.<sup>4</sup> For diagnosis imaging modalities such as ultrasonography and computed tomography play an important role. Therefore, we conducted a study to evaluate the CT findings of abdomen in patients of known population.

### MATERIAL AND METHODS

A study was conducted to evaluate the CT findings of abdomen in patients with Acute Abdomen at Department of Radiodiagnosis, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur, Tamil Nadu, India.

Sample size was chosen as 200. All patients who presented to emergency department with clinical diagnosis of acute abdomen were included in the study; pediatric age group (14 years and below), acute abdomen in pregnancy and gynecological causes of acute abdomen & patients managed conservatively were excluded from the study.

Detailed history and thorough physical examination findings were recorded. Routine investigations namely Hb%, TC, DC, ESR, urine routine was carried out. The radiological investigations comprised of plain CT scan. Statistical analysis was done by using computer-based SPSS-20.0 software programme. Student's t-test and Chi-square tests were applied wherever applicable to find out the level of significance and P value <0.05 was considered as the level of significance.

**Table 1: Gender Distribution**

Gender	N (%)	p-value
Male	127(63.5)	0.001
Female	73(36.5)	
Total	200(100)	

**Table 2: Parameters related to common causes of acute abdomen**

Common Causes	Gender	
	Male	Female
Acute appendicitis	41(32.2%)	23(31.50%)
Peptic ulcer perforation	34(26.77%)	19(26.02%)
Intestinal Obstruction	18(14.17%)	15(20.54%)
Ileal Perforation	13(10.23%)	9(12.32%)
Miscellaneous	21(16.53%)	7(9.58%)

**Table 3: CT findings**

Group	Findings of CT	Number of cases (200)	
		Male (127)	Female (73)
Group I	True positive	68(53.54%)	42(57.53%)
Group II	False negative	59(46.45%)	31(42.46%)

## RESULTS

The total sample was 200 in which the gender distribution was 127 (63.5%) were males, 73 (36.5%) were females. According to the results of our study the common cause of abdomen pain in both males and females was acute appendicitis. The results CT findings of abdomen show that true positive cases in males were 68 whereas in females 42 cases were true positive.

## DISCUSSION

Acute abdominal pain is a common chief complaint in patients examined in the emergency department and can be due to various diagnoses. Of all patients who present to the ED, 4%–5% have acute abdominal pain.<sup>5</sup> Obtaining a careful medical history and performing a physical examination are the initial diagnostic steps for these patients. On the basis of the results of this clinical evaluation and laboratory investigations, the clinician will consider imaging examinations to help establish the correct diagnosis.<sup>6</sup> This study was conducted among 200 patients of acute abdomen. Maximum numbers of patients were male i.e. 127 and females were 73 in number. The most common cause of abdomen pain in both males and females were acute appendicitis.

Kapoor A et al compare the diagnosis made by Ultrasonography and Multiple Detector Computed Tomography with final diagnosis. Multiple Detector Computed Tomography proved to be a superior modality in terms of sensitivity for all patients of acute abdomen except in cases of hepatobiliary & gynaecological pathologies.<sup>7</sup>

Anupama et al determine if computed tomography in patients with acute abdominal pain improves the accuracy of diagnosis. The result of the study shows that CT scan had significant, some and no influence on management decisions. The CT scan's influence on the management decisions included change of diagnosis, supporting the need for surgery, prompting referral to other specialty, avoiding surgical intervention. Conditions that can be accurately diagnosed by CT scan include acute appendicitis, acute cholecystitis, perforated peptic ulcer, acute pancreatitis, small bowel obstruction.<sup>8</sup>

## CONCLUSION

In the present study the most common cause of abdomen pain is acute appendicitis. Careful history, physical examination and laboratory examinations may lead us to determine the specific diagnosis in patients with acute abdominal pain. Therefore, the clinical and radiological findings are equally important.

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**Source of Support:** Nil. **Conflict of Interest:** None Declared.

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**Cite this article as:** V Arul Yagappa. Evaluation of CT Abdomen findings in Patients with Acute Abdomen at a Tertiary Care Teaching Hospital. *Int J Med Res Prof*. 2017 Nov; 3(6):513-15. DOI:10.21276/ijmrp.2017.3.6.115