

# A study of the factors responsible for emergency appendicetomy at tertiary health care center

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## Abstract

**Introduction:** Acute appendicitis is the most common cause of acute abdominal pain and Appendicetomy is the most frequently performed emergency surgery in the world. Although acute appendicitis mortality is low, morbidity remains high. **Aims and Objective:** To study the Factors Responsible for Emergency Appendicetomy. **Methodology:** After approval from institutional ethical committee This was hospital based, Prospective study of patients with Appendicitis confirmed by Ultrasonography at tertiary care hospital of January 2014 to January 2015 one year duration. All patients of who was having complications like perforated appendicitis or appendicitis with intestinal perforation all such necessary emergency situation were operated in emergency while other patients were operated electively. During one year duration total 105 patients of appendicitis were studied out of them 21 required emergency Operation while rest of the patients were treated electively. Data was analyzed by Chi-square test, Standard Error of Proportion (z-score) calculated by Graph Pad Prism 6 Software. **Result:** Most common age group of appendicitis was found in 31-40 (29.52%); 51-60(18.09%); >60 (14.28%); 41-50 (13.33%); 21-30 (10.47%); 11-20 (7.61%); <10 (6.66%). Majority of the Male patients were having Emergency Appendicitis surgery i.e. (28.30%) than Females i.e. (11.54%) this difference statistically significant ( $P < 0.031$ ;  $X^2 = 3.088$ ). Factors like Age >60 ( $P < 0.05$ ;  $Z = 6.275$ ); H/o Alcohol Addiction ( $P < 0.05$ ;  $Z = 6.11$ ); COPD ( $P < 0.05$ ;  $Z = 5.186$ ); H/o Diabetes ( $P < 0.05$ ;  $Z = 4.76$ ); H/o Fever  $> 38^{\circ}\text{C}$  ( $P < 0.05$ ;  $Z = 5.77$ ); Delay in Diagnosis and Treatment  $> 24$  hr. ( $P < 0.05$ ;  $Z = 6.301$ ) were significantly associated with Emergency Appendicetomy Operation. **Conclusion:** Factors like Age >60; H/o Alcohol Addiction; COPD; H/o Diabetes H/o Fever  $> 38^{\circ}\text{C}$ ; Delay in Diagnosis and Treatment  $> 24$  hr. were significantly associated with Emergency Appendicetomy Operation so these factors should be considered to prevent complications.

**Keywords:** Appendicetomy, Perforation of Appendix, COPD (Chronic Obstructive Pulmonary Disease), Diabetes.

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## INTRODUCTION

Acute appendicitis is the most common cause of acute abdominal pain and Appendicetomy is the most frequently performed emergency surgery in the world<sup>1,2</sup>.

Although acute appendicitis mortality is low, morbidity remains high<sup>3,4</sup>. Diagnosis of acute appendicitis is established primarily on patient's history and physical examination supported by laboratory and imaging exams<sup>5-8</sup>. Delay in the diagnosis and treatment is by far the main cause of appendicular perforation<sup>9-14</sup>. Acute appendicitis is the most common surgical disease, with an incidence of about 100 per 100,000. The life-time risk of developing appendicitis is 8.6% for males and 6.7% for females<sup>15,16</sup> with 90% found in children and young adults and 10% in patients over 60 years old<sup>17,18</sup>. With elderly patients, the diagnosis is more difficult, and this can lead to higher mortality and morbidity rates than in the general population<sup>19</sup>.

## AIMS AND OBJECTIVES

To study the Factors Responsible for Emergency Appendicetomy.

## MATERIAL AND METHODS

After approval from institutional ethical committee. This was hospital based, Prospective study of patients with Appendicitis confirmed by Ultrasonography at tertiary care hospital of January 2014 to January 2015 one year duration. All patients of who was having complications like perforated appendicitis or appendicitis with intestinal perforation all such necessary emergency situation were operated in emergency while other patients were operated electively. During one year duration total 105 patients of appendicitis were studied out of them 21 required emergency Operation while rest of the patients were treated electively. Data was analyzed by Chi-square test, Standard Error of Proportion (z-score) calculated by Graph Pad Prism 6 Software.

## RESULT

**Table 1:** Age wise Distribution of the Appendicitis patients

Age group	No.	Percentage
<10	7	6.66%
11-20	8	7.61%
21-30	11	10.47%
31-40	31	29.52%
41-50	14	13.33%
51-60	19	18.09%
>60	15	14.28%
<b>Total</b>	<b>105</b>	<b>100</b>

Most common age group of appendicitis was found in 31-40(29.52%);51-60(18.09%);>60(14.28%); 41-50(13.33%); 21-30(10.47%); 11-20(7.61%) ; <10(6.66%).

**Table 2:** Sex Wise distribution Appendicitis Patients

Sex	Emergency	Elective	Total
Male	15(28.30%)	38(71.70%)	53(100%)
Female	6(11.54%)	46(88.47%)	52 (100%)
<b>Total</b>	<b>21 (20%)</b>	<b>84(80.00%)</b>	<b>105(100%)</b>

$P < 0.031$ ;  $\chi^2 = 3.088$

From Table 2: Majority of the Male patients were having Emergency Appendicitis surgery i.e. (28.30%) than Females i.e. (11.54%) this difference statistically significant ( $P < 0.031$ ;  $\chi^2 = 3.088$ ).

**Table 3:** Distribution of the Appendicitis patients as per type of Surgery and Associated Factors

Associated Factors	Emergency Appendicetomy Surgery (n=21) No. (%)	Elective Appendicetomy Surgery (n=84) No. (%)	p-value
Age >60	12 (57.14%)	3(3.57%)	$P < 0.05$ ; $Z = 6.275$
H/o Alcohol Addiction	17(80.95%)	12(14.28%)	$P < 0.05$ ; $Z = 6.11$
COPD	15(71.42%)	13(15.47%)	$P < 0.05$ ; $Z = 5.186$
H/o Diabetes	13(61.90%)	11(13.09%)	$P < 0.05$ ; $Z = 4.76$
H/o Fever > 38 <sup>0</sup> c	17(80.95%)	14(16.67%)	$P < 0.05$ ; $Z = 5.77$
Delay in Diagnosis and Treatment >24 hr.	16(76.19%)	9(10.71%)	$P < 0.05$ ; $Z = 6.301$

Factors like; Age >60 ( $P < 0.05$ ;  $Z = 6.275$ ); H/o Alcohol Addiction ( $P < 0.05$ ;  $Z = 6.11$ ); COPD ( $P < 0.05$ ;  $Z = 5.186$ ); H/o Diabetes ( $P < 0.05$ ;  $Z = 4.76$ ); H/o Fever >38<sup>0</sup>c ( $P < 0.05$ ;  $Z = 5.77$ ); Delay in Diagnosis and Treatment >24 hr. ( $P < 0.05$ ;  $Z = 6.301$ ) were significantly associated with Emergency Appendicetomy Operation.

## CONCLUSION

Factors like Age>60; H/o Alcohol Addiction; COPD; H/o Diabetes H/o Fever > 38<sup>0</sup>c; Delay in Diagnosis and Treatment >24 hr. Were significantly associated with Emergency Appendicetomy Operation so these factors should be considered to prevent complications.

## DISCUSSION

The incidence of acute appendicitis in elderly patients aged more than 60 years was about 5–10% with good postoperative outcome after Appendicetomy, but, in the case of perforated appendicitis, there were instances of mortality and higher rates of morbidity postoperatively. The incidence of perforated appendicitis was 32%–72%<sup>20, 21</sup> mostly due to delayed diagnosis caused by equivocal history and physical examination<sup>21, 22</sup>. In our study the findings were Most common age group of appendicitis was found in 31-40 (29.52%) ; 51-60 (18.09%);>60 (14.28%); 41-50 (13.33%) ; 21-30 (10.47%); 11-20 (7.61%) ; <10 (6.66%). From Table 2: Majority of the Male patients were having Emergency Appendicitis surgery i.e. (28.30%) than Females i.e. (11.54%) this difference statistically significant ( $P < 0.031$ ;  $\chi^2 = 3.088$ ). Factors like were significantly Age >60( $P < 0.05$ ;  $Z = 6.275$ ); H/o Alcohol Addiction ( $P < 0.05$ ;  $Z = 6.11$ ); COPD ( $P < 0.05$ ;  $Z = 5.186$ ); H/o Diabetes ( $P < 0.05$ ;  $Z = 4.76$ ); H/o Fever > 38<sup>0</sup>c ( $P < 0.05$ ;  $Z = 5.77$ ); Delay in Diagnosis and

Treatment >24 hr. ( $P<0.05$ ;  $Z=6.301$ ) were significantly associated with Emergency Appendicectomy Operation. These findings are similar with Siripong Sirikurnpiboon *et al*<sup>23</sup>.

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