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A STUDY OF EPIDEMIOLOGICAL ASPECTS OF APPENDICITIS IN BHOPAL REGION

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ABSTRACT: BACKGROUND: Acute appendicitis is the most common abdominal surgical emergency. The rate of incidence of appendicitis varies for different countries and regions. As epidemiological data is scarce for this entity, the study was done to determine the changes in frequencies of acute appendicitis in different age group, gender and seasons. **MATERIAL AND METHODS:** The descriptive cross sectional study was performed in the Department of Surgery Chirayu Medical College and hospital Bhopal from November 2011 to November 2014. Data of all diagnosed cases of appendicitis aged 10 years to 70 years were taken from wards and operation theatre. Patients having recurrent disease and those who underwent interval appendectomy were excluded. Data analysis was done SPSS for windows version 17. **RESULTS:** During this period 108 cases were studied ranging from 10 years to 70 years with a mean age 35 ± 11.2 years. There were 73 males 35 females. (Male: female ratio 2.08:1). Appendicitis was most common in age group 21 to 30 years (35.1%) the frequency was highest in rainy season (38.8%) and lowest in winter season **CONCLUSION:** This study clearly shows the differences in frequencies of appendicitis in various seasons, age groups and gender. The frequency was highest in rainy season and lowest in winter season. Such studies can help in proper allocation and planning of health resources in treatment of appendicitis.

KEYWORDS: Appendicitis, Seasonal pattern.

INTRODUCTION: Appendicitis is the most common surgical emergency with a life time risk of 6%.¹ Various etiological factors like diet, familial susceptibility, presence of obstructive agents have been studied for acute appendicitis Few epidemiological data on appendicitis is present in Indian and Asian population as most studies are on western population.^{2,3,4,5} The incidence in children is high in developed cities where diet is rich in fat and low in roughages. As we know that surgery done on clinically stable children with mildly inflamed appendix have good prognosis, but in complicated appendicitis in clinically compromised children the prognosis can be grave. The study was done to see the significance of age, gender and seasonal variation of appendicitis in our region.

MATERIAL AND METHODS:

Study Population: 108 diagnosed cases of appendicitis aged 10 years to 70 years were taken from wards and operation theatre.

Exclusion Criteria: Patients having recurrent disease and those who underwent interval appendectomy were excluded.

Study Design: Descriptive cross sectional study.

Study Period: November 2011 to November 2014.

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Statistical Analysis: Data was analysed with the help of SPSS for windows version 17.

RESULTS: Total 108 patients were diagnosed with acute appendicitis during 4 year period, ranging from 10 years age to 70 years with a mean age of 35 years (SD±11.2) including 73 male patients and 35 female patients (male to female ratio of 2.08:1). Acute appendicitis was most prevalent in young adults in the age group 21 to 30 years (35.1%). The frequency of appendicitis was highest in rainy seasons (38.8%) and lowest in winters (13.8%).

DISCUSSION: Acute appendicitis is generally considered to be the end result of a primary luminal obstruction. As this obstruction occurs the appendix subsequently becomes filled with mucus fluid and swells, increasing pressures within the lumen of the appendix, resulting in thrombosis of the small vessels, ischaemia and perforation. Babekir et al⁶ reported lymphoid hyperplasia in 25% cases. They proposed that obstruction by lymphoid hyperplasia plays an important role in the pathogenesis of acute appendicitis

Highest frequencies of appendicitis were seen in 21 years to 30 years which is 35.1%, followed by 23.1% in 11 to 20 years age group. These observations are supported by studies from different parts of the world. Aslam MN et al.⁷ observed similar results in Lahore, Pakistan with 65% patients falling in age group of 15 years to 30 years. While Noudeh YJ et al.⁸ showed highest appendicitis incidence in males aged 20-29 years and females aged 10-19 years in their study from Tehran. Supporting results were also reported by Al-Omran M et al.⁹ from Canada, Livingston EH et al.¹⁰ from United States, Sulu B et al.¹¹ from Turkey.

A well-defined seasonal variation was observed in our study. An increased incidence was noted in the rainy season, i.e. the months of July, August & September. Similar findings were noted in two studies from Nigeria and the Middle East respectively where multiple factors like humidity, allergens, increased incidence of bacterial & viral infections (Causing lymphoid hyperplasia leading to appendiceal luminal obstruction) have been implicated.^{12,13} In contrast, an higher incidence of appendicitis in the summer months & lower incidence in the winter months has been reported in a study from Ontario, Canada.¹⁴

CONCLUSION: Age specific occurrence and sex ratio of appendicitis give the impression that epidemiologic features of acute appendicitis are different all over the world. The incidence of appendicitis has highest rates in rainy season and amongst teenagers but further studies on demographics and epidemiology will help in proper allocation of health resources for the management of this condition

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Age in years	Males	Females	Sub total	Percentage (%)
0-10	3	2	05	4.6
11-20	17	8	25	23.1
21-30	25	13	38	35.1
31-40	12	07	19	17.5
41-50	08	03	11	10.1
51-60	04	01	05	4.6
61-70	02	00	02	1.8
>70	02	01	03	2.7
Total	73	35	108	100

Table 1: Distribution of the Appendicectomy patients according to the age and sex

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Months of the year	No. of Cases	Percentage (%)
Jan-Mar	19	17.5
Apr-Jun	32	29.6
Jul-Sep	42	38.8
Oct-Dec	15	13.8
Total	108	100

Table 2: Distribution of the cases according to the months of the year

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