

## Appendicitis in Basrah City: An Observational Study

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Acute appendicitis; Abdomen discomfort;  
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## 1. Abstract

### 1.1. Background

Acute Appendicitis is a prevalent cause of severe lower abdomen discomfort that necessitates rapid attendance at the emergency department. It occurs in approximately 17.7 million individuals worldwide each year. The study aimed to evaluate factors influencing development of AA in Basrah city.

### 1.2. Method

An observational study was conducted in the emergency room at Al-Sadder Teaching Hospital from 2022 to 2024. Totally 250 cases enrolled, their age ranged from (8 to 66) years. All patient data participating was recorded in the questionnaire. The demographic characters including: Age, sex, smoking, residency, and family history of AA.

### 1.3. Results

The incidence of AA for male were 62% while it was 38% for female. Age mostly recorded in groups (8-15 yrs), (16-30 yrs) and (31-45 yrs) in 20.4%, 27.6% and 30%, respectively. The smoking patients have a lower rate (44.4%) than non-smoking habits (55.6%). Patients lived in urban regions have a higher rate (56.8%) than in the rural (43.2%). Positive family history of AA had a rate of 34 percent, while patients without family history had a rate of 66 percent. Young age, male and family history can be strongest predisposing factors to develop AA (OR=6.02; P=0.001), (OR= 4.55; P=0.05), and (OR= 3.52; P=0.01), respectively. However, smoking and urban areas are not of value in

AA development (OR=1.113; P=0.09) and (OR=0.897; P=0.08), respectively.

### 1.4. Conclusion

Young age, male and family history can be strongest predisposing factors to develop AA. However, smoking and urban areas are not of value in AA development. Differences in dietary habits, environmental and immunological may have made residents of the center have a higher rate of AA than those who live in the periphery.

## 2. Introduction

Acute Appendicitis (AA) is the most common clinical presentations of acute abdominal condition in the emergency words [1], affect more than 20 million people annually [2]. A lead to pain in the center of the abdomen that gradually spread to the right lower quadrant. Other symptom of AA is a loss of appetite as a consequence of intestinal obstruction, nausea and vomiting [3].

Diagnosing AA can be difficult due to multiple possible similar conditions, particularly in females. Any delays in management might lead to higher rates of death and morbidity [4]. US and CT scan have become the most often used methods for accurately diagnosing AA [5]. Appendectomy it is routinely surgical dissection of the appendix [6], achieved by either an open or laparoscopic approach. Potential factors that can initiate the processes of AA include the blockage of the inner passage by an appendicolith (a calcified deposit), a tumor, an excessive growth of lymphoid tissue, an obstruction resulting from a foreign object, or a viral infection that subsequently leads to a bac-

terial infection [7, 8]. The study aimed to evaluate factors influencing development of AA in Basrah city.

### 3. Method

#### 3.1. Study Design and Setting

An observational study was conducted in the emergency room at Al-Sadder Teaching Hospital from 2022 to 2024. Totally 250 cases enrolled, their age ranged from (8 to 66) years.

#### 3.2. Data Collection

All patient data participating was recorded in the questionnaire. The demographic characters including: Age, sex, smoking, residency, and family history of AA.

#### 3.3. Statistical Analysis

The analysis was carried out using SPSS (Ver. 26). Chi-Square test and Fisher's test were applied to compare all variables. Probability levels were  $< 0.05$  is significant.

#### 3.4. Results

The incidence of AA for male were 62% while it was 38% for female. Age mostly recorded in groups (8-15 yrs), (16-30 yrs) and (31-45 yrs) in 20.4%, 27.6% and 30%, respectively. The smoking patients have a lower rate (44.4%) than non-smoking habits (55.6%). Patients lived in urban regions have a higher rate (56.8%) than in the rural (43.2%). Positive family history of AA had a rate of 34 percent, while patients without family history had a rate of 66 percent, (Table 1).

**Table 1:** Distributions of AA.

Variables	No.	%
Sex	Male	62
	Female	38
Age	8-15	20.4
	16-30	27.6
	31-45	30
	46-60	12.8
	>60	9.2
Smoking tobacco	Yes	44.4
	No	55.6
Residency	Urban	56.8
	Rural	43.2
Family history	Positive	34
	Negative	66

**Table 2:** Regression analysis of this study.

Variable	OR	95% CI	P value
Male sex	4.55	1.522-3.645	0.05
Young age	6.02	2.501-12.774	0.001
Smoking	1.113	-0.505 - -1.554	0.09
Living in center	0.897	0.255-1.022	0.08
Positive family history	3.52	1.555- 5.139	0.01

### 4. Discussion

AA is a prevalent cause of lower abdominal pain that prompt people to seek immediate medical attention at the emergency room [9]. When AA gets worse, extra fat around the appendix and organs around it start to be involved in the inflammation process [10]. The study into this, the highest age group of patients with AA was in the age groups (16-30 yrs) and (31-45 yrs). In contrast, fewer cases of AA appeared in the age group more than (>41) 9 (9%) of total study cases 100 (100.0%), these data agree with those [11, 12]. In AL-Najaf, Naher and Ktab, [13] recorded that a higher ratio was (81%) ob-

served in the age group with mean age (15-25) respectively. Other studies found that in general, AA is most frequent between the age of 10 and 30 and in the age group of 20-30 years [14-16]. Petroianu and Barroso [17] suggested that the prevalence of AA in young cases suppose the pathophysiological role of lymphoid tissue in abundance in the appendix at this decade of life. In explanation AA occurs due to obstruction of the appendix as a result of lymphoid hyperplasia. The appendix has a lot of lymphoid tissue in the submucosa, and both the number and size of these cells grow with age, hitting their peak in adolescence, when the risk of getting AA is highest,

whereas explained that the lower ratio was in age above 35 years that might be due to regression in the amount of lymphatic tissue in the appendix [18]. The present study assessed the relationship between AA and smoking habits. These are agree with [19] finding that a rate of smoking patients in his study was 29%. Another study show that smoking increases the incidence of AA, particularly among current smokers, regardless of the severity or length of their habit, and another research adds to the mounting evidence linking active tobacco use to the development of AA [12]. Another predisposing factor was a family history of AA. Statistically, there were significant differences when compared with the patient and control groups. A study was done by Drescher et al. [20] that examined the relationship between a positive family history and the diagnosis of AA in adults. The study found that people who arrived at the emergency department (ED) with a known family history of AA were more likely to have this illness compared to those without such a history.

The hereditary predisposition to AA may be attributed to environmental circumstances, including a particular bacterial infection and certain dietary habits, such as a low intake of fiber, which may have a crucial impact on the development of AA. It is likely that a genetic variation in resistance to bacterial infection is responsible for around 70% of the cases [21]. Based on previous studies, it appears that knowing a patient's family history of AA, along with other clinical and laboratory findings, can help emergency physicians assess the likelihood of diagnosing AA in patients who are suspected to have it at the Emergency Department [22].

In our study, young age, male and family history can be strongest predisposing factors to develop AA (OR=6.02 ; P=0.001), (OR= 4.55; P=0.05), and (OR= 3.52; P=0.01), respectively. However, smoking and urban areas are not of value in AA development. The results agree with [11] in Basra, which found that (83.5%) cases from Urban areas and (16.5%) of cases from Rural areas.

Harrop, [23] in America agrees with us with (88.8%) of urban and (11.2%) for rural areas, these differences in the incidence of AA that presents in the Urban area were more than in Rural area may be because of the differences in the diet and the typical immune system, food nature and hereditary issues [24].

The social transformation, saw the proliferation of many fast-food establishments, the introduction of diverse culinary options, and a general escalation in pollution levels. The GBD 2019 study assessed many risk factors for AA mortality, including inadequate fruit and vegetable diet, education level, and LDI [25, 26].

## 5. Conclusion

Young age, male and family history can be strongest predisposing factors to develop AA. However, smoking and urban areas are not of value in AA development. Differences in dietary habits, environmental and immunological may have made residents of the center have a higher rate of AA than those who live in the periphery.

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