APPRAISAL OF MODIFIED ALVARADO SCORE FOR ACUTE APPENDICITIS IN NIGERIA ADULTS

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Abstract

Decision making in cases of acute appendicitis may be difficult experience in Nigeria where the facilities for investigations are lacking. Modified Alvarado score (MASS) was very important in diagnosis and treatment of patients with acute appendicitis seen in a semi rural area of Lagos Nigeria.

Method: All adult patients aged 16 and above who were seen with a provisional diagnosis of acute appendicitis between January 2012 and December 2014 were included in the study. There were 35 males and 23 females. The 58 patients were evaluated on admission using modified Alvarado score to determine whether they have acute appendicitis. The Alvarado score was compared with the operative and histology results.

Results: Fifty eight patients were operated. The operative findings showed 51 (87.9) has positive result for acute appendicitis. While 7 (12.1) had negative findings. However the histology shows 44 (75.9) with features of acute appendicitis and 14 (24.1) were negative.

Conclusion: The above results shows modified Alvarado score is very sensitive in diagnosis of acute appendicitis in our environment. It is a very useful tool in absence of facilities in diagnosis of acute appendicitis.

INTRODUCTION: Acute appendicitis is a diagnostic challenge in our environment where modern diagnostic facilities are lacking. The variation in presentation can challenge even the very astute surgeon [(1)] various scoring system have been devised to aid in diagnosis and to determine who will required further investigation, observations or urgent surgery [(2-4).]

Alvarado score was devised to help in the early diagnosis and treatment of patient with acute appendicitis. Although some reporters have found that Alvarado score alone is inadequate as single diagnostic test [(5-6)]. We in our centre have found the Alvarado score to be very useful in diagnosis and treatment of acute appendicitis.

Material/ Method

This is a prospective study including, 58 patients seen during a period of 2 years in a general Hospital in Lagos, Nigeria. All patients above 16 years with signs and symptoms of acute appendicitis were included in the study. Data including, age, sex, symptoms, physical signs and laboratory findings such as *leucocytosis* were recorded .in modified Alvarado score. All patients underwent appendicitis. Diagnosis of acute appendicitis was based on post operative Histology report.

Results: 58 patients with diagnosis of acute appendicitis were seen in the period between January 2012 to December, 2014. There were 35 males and 23 females. The highest age incidences of acute appendicitis was within 21-30 years accounting for 48.3%. The incidence of acute appendicitis decline with age. The frequency of distribution according to symptoms/signs and investigation shows, that the most specific sign was right iliac fossa tenderness of 93.1 follow by nausea and migrating abdominal pains.

The operative findings show 55 (87.5) had appendicitis while histology shows 44 (79.5%) were positive for acute appendicitis.

TABLE 1: Sex Distribution

	Frequency	**percentage**
Male	35	60.3
Female	23	39.7
Total	**58**	**100**

TABLE 2: Age Distribution

Age in years	Frequency	Percentage
10-20	16	27.6%
21-30	24	48.3
31-40	14	22.9
41-50	3	5.2
51-60	1	1.7

TABLE 3: Frequency of Distribution of Patients according to symptoms/signs/investigation

Symptoms	Number	percentage
1. Migratory RLQ pain	42	72.4
2. Anorexia	36	67.2
3. Nausea	48	82.8
4. RLQ Tenderness	54	93.1
5. Rebound Tenderness	36	62.1
6. Extra sign	43	74.1
7. Leucocytosis	29	50.0
8. Elevated temperature	29	50.1

TABLE 4: Frequency of Distribution of Patients according to modified Alvarado score

Score	Frequency	Percentage	
1.	0		0
2.	0		0
3.	1		1.72
4.	1		1.72
5.	2		3.14
6.	4		6.88
7.	10		17.2
8.	18		31.03
9.	22		37.9

DISCUSSION: The Alvarado score is the most widely used in diagnosis and treatment of acute appendicitis but has not been widely used in Nigeria. Acute appendicitis is common problem in Nigeria and post a diagnostic challenge where investigative tool such as CT scan is not widely available. The proper diagnosis of patients with suspected acute appendicitis is based on clinical evaluation and investigation tool to know those that warrant surgery and those that may be safely observe [7]

Accurate diagnosis is key to decrease the morbidity and mortality in this common disease.

Various scoring system have been developed to aid in the diagnosis of acute appendicitis. Among these, the most common one is Alvarado score [8]

In this study, we found a male preponderance of 60.4% which is agreement with other studies in Kenya, Nigeria and Ethiopia [9, 10, 11.]

The majority of the patients (75.9) were aged between (10-30years). This study is comparable with results of (Maral F et al) [12] and Khan and Rehman 13. Acute appendicitis was more common in the aged group 21- 30 accounting for 48.3%.

Several studies validated modified Alvarado score using different cut off (14). In this study, the cut off points was7 and 85% of the patients had modified Alvarado score of >7 and only 15% had a score of <7.

This result is comparable to findings of Maral F et al that have 87.1 (12).

The overall negative appendectomy rate in this study was 24.1% according to histology and this supported by some literature 15-16 which showed that if the negative appendectomy is less than10-15%then the surgeon is operating on too few patients thus increasing the risks of complication

The negative appendectomy rate is comparable to karumba et al 17 (33.1) but different from Macklin et al and Mural F et al that had 14%.

In conclusion modified Alvarado score is easy and simple in helping the surgeon to make accurate diagnosis of acute appendicitis.

Conclusions: Alvarado scoring system is easy and simple and is very useful in pre operative diagnosis of acute appendicitis and can be used by General practitioner in a diagnosis of acute appendicitis. Scores of 7 and above will confirm the diagnosis of acute appendicitis.

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