



“COMPARIASION OF MODIFIED ALVARADO SCORE AND RIPASA SCORE IN DIAGNOSIS OF ACUTE APPENDICITIS.”

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ABSTRACT

Introduction : Acute appendicitis remains a common abdominal emergency worldwide. The diagnosis of acute appendicitis continues to be difficult due to its variable presentation. None of the clinical scores or investigations like USG, CT, succeeded in diagnosing appendicitis with certainty. So, even to date, a thorough clinical examination with basic investigations and clinicians judgment in ruling out the other possibilities is prime at arriving the diagnosis of acute appendicitis.

Patients and methods: An observational study was conducted within the time frame of June 2017 and February 2018 at Osmania general hospital Hyderabad, India.

It included patients with the presumptive diagnosis of acute Appendicitis . The parameters in the clinical scores were filled before surgery by the surgical residents and those with any missing data from the scores are excluded, and a histopathological examination is done to confirm

Aim : This study aims to compare modified Alvarado score with the RIPASA score.

Results :

In this study the RIPASA score is able to diagnose 87.7% of patients whereas modified Alvarado score is able to predict only about 52.6 % of the patients of the true positive appendicitis

Conclusion: The diagnosis of acute appendicitis continues to be difficult due to its variable presentation. RIPASA score is far superior in diagnosing acute appendicitis compared to modified Alvarado score, modified Alvarado score is less sensitive and has many false negatives.

KEYWORDS :

INTRODUCTION:

Acute appendicitis remains a common abdominal emergency. The diagnosis of acute appendicitis continues to be difficult due to its variable presentation. None of the clinical scores or investigations like USG, CT, succeeded in diagnosing appendicitis with certainty. So, even to date, a thorough clinical examination with basic investigations and clinicians judgment in ruling out the other possibilities is prime at arriving the diagnosis of acute appendicitis. This study aims to compare modified Alvarado score with the RIPASA score.

The most common age range is 25-35 years of age.^{1,2} Delayed appendectomy after a period of observation to improve diagnostic accuracy increases the risk for appendicular perforation and sepsis, morbidity and mortality (surgical site infection 8-15%, perforation 5-40%, abscesses 2-6%).^{1,3}

Modified Alvarado score has 68-82% sensitivity and 75-87.9% specificity in diagnosing acute appendicitis.^{1,5}

The Raja Isteri Pengiran Anak Saleha appendicitis (RIPASA) scoring system is relatively new. It was developed in 2010 at the RIPASA Hospital of Brunei and has improved sensitivity (98%) and specificity (83%).^{1,4}

PATIENTS AND METHODS: An observational study was conducted within the time frame of June 2017 and February 2018 at Osmania general hospital Hyderabad, India.

It included patients with the presumptive diagnosis of acute Appendicitis . The parameters in the clinical scores were filled before surgery by the surgical residents and those with any missing data from the scores are excluded, and a histopathological examination is done to confirm in all patients

TABLE 1: Modified Alvarado Score

MODIFIED ALVARADO SCORE	
MIGRATORY PAIN	1
ANOREXIA	1
NAUSEA	1
RIGHT ILLIAC FOSSA TENDERNESS	2
REBOUND TENDERNESS	1
FEVER	1
LEUCOCYTOSIS	2
Total	9

Low risk group (0-4 points) b) intermediate risk (5-6 points) high risk (7-9 points)

TABLE 2: RIPASA score: Foreign national parameter not included

RIPASA score.			
Male	1	Tenderness in RIF	1
Female	0.5	Abdominal guarding	2
Age <39.9	1	Rebound tenderness	1
Age >40	0.5	Rovsing sign	2
Pain in the right iliac fossa	0.5	Fever > 370C <390C	1
Nausea/vomiting	1	Leukocytosis	1
Migratory pain	0.5	Negative urinalysis	1
Anorexia	1		
Symptoms < 48 h	1		
Symptoms > 48 h	0.5		
Total score : 15			

A score of: < 5 points (unlikely, patient observation) , 5-7 points (low probability, emergency room observation, abdominal ultrasound), 7.5-11.5 points (high probability, surgical evaluation and preparation for appendectomy), and > 12 points (appendicitis diagnosis, appendectomy)

RESULTS:

TABLE 3: comparison of Ripasa vs modified Alvarado

	RIPASA	Modified Alvarado
% of patients predicted to have appendicitis with high probability (modified Alvarado score ≤ 7 , RIPASA ≤ 7.5)	85.7	53.9

TABLE 4: Patients with RIPASA score in different strata

	No. of patients	Percentage
<7.5	9	14.2
7.5 to 12.5	44	69.8
>12	10	15.8

TABLE 5: Patients with Modified Alvarado score in different strata

	No. of patients	percentage
≥ 7	33	53.96
5-6	19	28.5
≤ 4	11	17.46

False positive cases in total 6

False positive in modified Alvarado are 3 and in RIPASA are 4

DISCUSSION: Acute appendicitis remains a common abdominal emergency worldwide the diagnosis of acute appendicitis continues to be difficult due to its variable presentation. None of the clinical scores or investigations like USG, CT, succeeded in diagnosing appendicitis with certainty. So, even to date, a thorough clinical examination with basic investigations and clinicians judgment in ruling out the other possibilities is prime at arriving the diagnosis of acute appendicitis. This study aims to compare modified Alvarado score with the RIPASA score.

There are 33 males and 30 females in the present study. RIPASA score is able to diagnose 87.7% of patients (54 patients were predicted to have appendicitis of which 4 patients are false positive in study are 6 and thus true positives are 57, so RIPASA predicted 50 cases of the true positives and true negatives) whereas modified Alvarado score is able to predict only about 52.6 % of the patients of the true positive appendicitis ($p < 0.05$)

When considering the modified Alvarado score and taking the intermediate group also into account then the percentage of predicting the appendicitis has almost equaled that of the RIPASA score.

Migratory pain is seen in only 23 cases and thus the absence of migratory pain is a poor indicator but however the presence of migratory pain is a useful parameter as all patients except one having the migratory pain are true positives.

Adding a Rovsing's sign alone has increased the diagnostic accuracy of modified Alvarado score in 7 patients when given a value of 1

The false positive rate of both scores is not statically significant with RIPASA having 4 false positives and modified Alvarado having 3 false positives, but the false negatives in modified Alvarado score are 27 that accounting for 47%. Thus routinely employing only modified Alvarado score without clinical judgment is far inferior to the RIPASA score

CONCLUSION: The diagnosis of acute appendicitis continues to be difficult due to its variable presentation. RIPASA score is far superior in diagnosing acute appendicitis compared to modified Alvarado score, modified Alvarado score is less sensitive and has many false negatives.

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