# Role of Modified Alvarado Scoring and Tzanakis Score in Females with RLQ Abdominal Pain

## Selvaganesh Chandrasekaran, Laxmibady

*Department of General surgery, G.V.M.C.H, Tamilnadu, India*
*Department of General surgery, G.V.M.C.H, Tamilnadu, India*
*Corresponding Author: Selvaganesh Chandrasekaran*

**Abstract**
*Acute appendicitis is a common surgical emergency. Though it is a clinical diagnosis,to avoid negative laparotomy various scoring systems are used. As USG is considered extended tool of surgeon,this study compared the efficacy of Tzanakis and modified Alvarado score in diagnosis of acute appendicitis in female patients presented with RLQ abdominal pain.*
*60 female patients admitted with RLQ abdominal pain suspected acute appendicitis where included in thisstudy .This study carried out from June 2008 to January 2011in K.A.P.V.Medical college hospital,Trichy. Final diagnosis of acute appendicitis was based on histological findings.*
*Hence forth the above study showed that Tzanakis score is an effective modality to establish the accurate diagnosis of acute appendicitis.*

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## I    Introduction

Acute appendicitis is one of the most common abdominal .surgical emergency.It is the inflammation of the mucosal lining of the vermiform appendix at the RLQ Abdomen which extends to its other parts with pain which increase with degree of inflammation. Due to various gynecological and retro peritoneal causes diagnosis of acute appendicitis infemale with minimal symptoms is a nightmare. To avoid negativelaparotomyand improve diagnosis of appendicitis various scoring systems are in use. They are Alvarado, modified Alvarado, Tzanakis, Ripasa in which we took modified Alvaradoscoring and Tzanakis for our study.

**Tzanakis scoring**

| Symptoms | Score |
|---|---|
| Migratory right iliac fossa pain | 1 |
| Nausea/Vomiting | 1 |
| Anorexia | 1 |
| Signs<br>Tenderness in right iliac fossa | 2 |
| Rebound tenderness in right iliac fossa | 1 |
| Elevated temperature | 1 |
| Laboratory findings Leukocytosis | 2 |
| Total | 9 |

**Modified Alvarado Scoring**

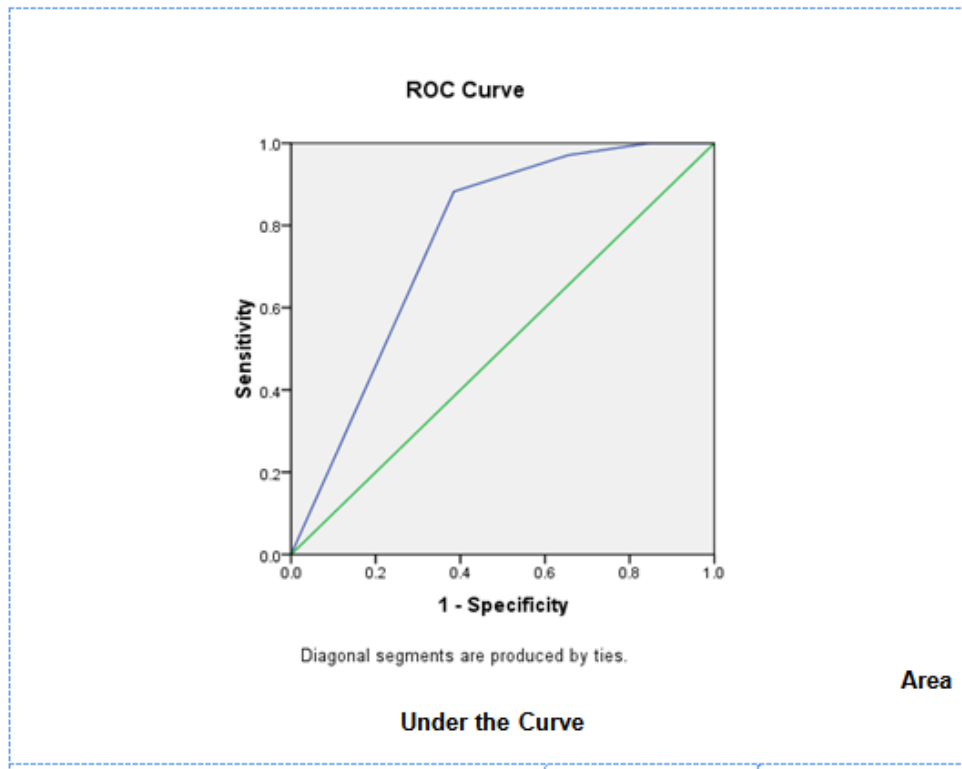| Symptoms | Score |
|---|---|
| Migratory right iliac fossa pain | 1 |
| Nausea/Vomiting | 1 |
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## II   Material And methods

A prospective non randomized study was designed to study the female patientswho are presented with RLQ Abdominal pain admitted to department of general surgery in K.A.P.V.Medical college hospital, Trichy from June 2008 to January 2011. Permission of institutional ethical committee was obtained prior to the study.

After admission patients underwent complete history taking and physical examination, radiological investigation and laboratory investigation. Each individual underwent Modified Alvarado scoring and Tzanakis scoring system in format. Both scores were compared and patients who had Tzanakis score more than 8 were underwent appendicectomy and HPE report was analyzed.

| No.of patients | MAS | T.S | Appendicectomy | Final Diagnosis |
|---|---|---|---|---|
| 25 | 9 | 15 | yes | Acute appendicitis |
| 10 | 8 | 15 | yes | Acute appendicitis |
| 5 | 7 | 13 | Yes | Acute appendicitis |
| 10 | 6 | 13 | yes | Acute appendicitis |
| 5 | <7 | <8 | - | PID |
| 2 | <7 | <8 | - | ovarian cyst |
| 2 | <7 | <8 | - | Ureteric colic |
| 1 | <7 | <8 | - | Amoebic colitis |

## III Results



ROC Curve

Diagonal segments are produced by ties.

**Area Under the Curve**

Test Result Variable(s):TS

| | | | Asymptotic 95% Confidence Interval | |
|---|---|---|---|---|
| Area | Std. Error[a] | Asymptotic Sig.[b] | Lower Bound | Upper Bound |
| .762 | .066 | .001 | .633 | .892 |

The test result variable(s): TS has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

| Coordinates of the Curve | | |
|---|---|---|
| Test Result Variable(s):TS | | |
| Positive if Greater Than or Equal To[a] | Sensitivity | 1 - Specificity |
| 5.00 | 1.000 | 1.000 |
| 6.50 | 1.000 | .846 |
| 10.00 | .971 | .654 |
| 14.00 | .882 | .385 |
| 15.00 | .000 | .000 |

The test result variable(s): TS has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

| Tzanakis score | | ≥8 | <8 | TOTAL |
|---|---|---|---|---|
| | ≥7 | 31 | 9 | 40 |
| MAS | <7 | 10 | 10 | 20 |
| | | 41 | 19 | 60 |

CHI SQUARE = 4.582503

P VALUE= 0.0323**

## IV  Discussion

31 patients had MAS score >7 and TS >8 so they underwent emergency appendicectomy 10 patients having MAS score <7 underwent USG had TS score >8 benefitted by appendicectomy while comparing the MAS withTS, TS was having more (0.762) i.e. 76.2% more efficient tool to identify Acute Appendicitis.

## V  Conclusion

The Tzanakis score is a simple, applicable and effective scoring system for diagnosing acute appendicitis.

**Conflict Of Interest**
None declared

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