Title:
Evaluation of clinical significance of Alvarado score for diagnosis of acute appendicitis in patients referred to Dr. Shariati Hospital in Isfahan during 2016-2017

Abstract:
Background: Diagnosis of acute appendicitis in patients with acute abdominal pain, on the one hand, is based on clinical and laboratory symptoms and on the other hand, by rejecting other causes. Currently, based on surgical texts, the proposed benchmark for acute appendicitis is Alvarado Score, which includes 10 points. Purpose: this study was designed to evaluate of clinical significance of Alvarado score for the diagnosis of acute appendicitis in patients referred to Dr. Shariati Hospital in Isfahan during 2016-2017. Methods: This cross-sectional study was performed on 140 patients with suspected acute appendicitis symptoms who referred to Emergency Department of Isfahan Dr. Shariati Hospital during the years 2016-2017 and eventually underwent appendectomy by the general surgeon. Patients were identified and recorded at the time of referral by a physician and a researcher for clinical and laboratory criteria related to Alvarado score. Eventually all patients were by a general surgeon under appendectomy and a surgical sample was sent to the lab for pathological examination and the results were followed up by the researcher. Finally, the data were analysed using SPSS version 23 software. Results: According to the results of our study, 25% had negative appendectomy. The average of Alvarado score in patients with pathologic diagnosis of acute appendicitis was significantly higher than those with other diagnoses, and this difference was not significantly related to the age and gender of the patients. The sensitivity, specificity, negative predictive value, and positive predictive value of Alvarado with cutoff 6 in the diagnosis of acute appendicitis were respectively 90.4%, 54.2%, 65.5% and 85.5%, which represents high sensitivity and positive predictive value in contrast to the low negative predictive value and specificity, this criterion is used to detect acute appendicitis. Shift of pain, leukocytosis, left shift of white blood cells, RLQ tenderness and rebound tenderness were significantly more common in patients with a pathologic diagnosis of acute appendicitis compared to patients with other diagnoses. Conclusion: Ultimately, this study showed that Alvarado score with cutoff 6 is a good way to decide on appendectomy in The patients, however, consideration should be given to the relatively low specificity of this criterion. Therefore, in cases of low Alvarado score, if there is a strong clinical suspicion, another diagnostic methods, such as CT scan and sonography should be used.

Keywords:
Alvarado criteria, acute appendicitis, clinical value