عنوان مقاله:

Evaluation of Suspected Pediatric Appendicitis with Alvarado Method Using a Computerized Intelligent Model

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خلاصه مقاله:

Background: Acute appendicitis is one of the common and urgent illnesses among children. Children usually are unable to help the physicians completely due to weakness in describing the medical history. Moreover, acute appendicitis overlaps with conditions of other diseases in terms of Symptoms and signs in the first hours of presentation. These conditions lead to unwanted biases as well as errors for diagnosis of acute appendicitis and increase the medical costs for hospitals and patients. The purpose of this study is to develop a computer based model in the diagnosis of Acute appendicitis specially at pediatrics field. Materials and Methods: Fuzzy-rule based systems are popular methods widely used in the Clinical Decision Support Systems (CDSSs). In this article, a hybrid Fuzzy rule based system as a CDSS was compared with the Alvarado method for diagnosis of appendicitis in children. In this system an evolutionary algorithm was also developed to create and optimize the Fuzzy rules for diagnosis of pediatrics. To find the performance of the proposed model, a dataset was created from children with abdominal pain who referred to the teaching general hospitals in Ahvaz, Iran in 2013 to 2014 years. In this process, the results achieved from the developed model were compared with the Alvarado scoring system used for children with abdominal pain in the previous studies. Results: The experimental results showed that the developed model has a proper performance to detect the patients with acute appendicitis from others techniques and models such as the Alvarado scoring system. Conclusion: The developed model can be used as an assistant for physicians in the diagnosis of acute appendicitis, especially in the field of pediatrics.

کلمات کلیدی:

Appendicitis, Fuzzy Logic, Meta-heuristic algorithms, Pediatric

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