

A Clinical Prediction Score for Ruptured Appendicitis in Emergency Departments

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Abstract

Acute appendicitis is a common surgical condition in emergency departments. Ruptured appendicitis has a high morbidity and mortality and requires immediate surgery to remove the appendix and clean the abdominal cavity. The Alvarado Score is used as a tool to predict the risk of acute appendicitis, but there is no such score for predicting rupture. This study aimed to evaluate which clinical prediction factors are associated with ruptured appendicitis in an Asian population and to develop clinical predictive score. The study was conducted retrospectively using an exploratory model at the Emergency Medicine Department of Ramathibodi Hospital, a university-affiliated super tertiary care hospital in Bangkok, Thailand. The study period was between March 2016 and March 2018. The inclusion criteria were age >15 years, visit to the emergency department, and an available pathology report after appendectomy. Those patients with appendicitis and no pathology report were excluded. The predictive model and prediction score for ruptured appendicitis was developed by multivariate logistic regression analysis. During the study period, 480 patients met the inclusion criteria; of these, 77 (16%) had ruptured appendicitis (positive pathology result). Five independent factors were predictive of rupture. The clinical risk score we developed to predict ruptured appendicitis had an accuracy of 81%. A score of >2 increased the likelihood ratio of ruptured appendicitis by 0.55 times. Using the RAMA-We Ruptured Appendicitis Risk Score developed in this study, a clinical predictive score of >2 was associated with ruptured appendicitis.



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1. "Gold Nanoparticles Supported on Carbon Derived from Solid Olive Waste for Epoxidation of Cyclooctene"; Asian J. Chem. / 2018 / 30(8) /pp 1731-1735
2. "Adsorption, kinetic and thermodynamic studies of safranin and methylene blue on a novel adsorbent based on phosphorylated sawdust"; Desalination and Water Treatment/ Vol 151 (2019) 199–211
3. "Green synthesis of spongy Nano-ZnO productive of hydroxyl radicals for unconventional solar-driven photocatalytic remediation of antibiotic enriched wastewater"; Journal of Environmental Management/ Vol 271, 2020, 110961.
4. "Sulfhydryl functionalized activated carbon for Pb(II) ions removal: kinetics, isotherms, and mechanism"; Journal of Separation Science and Technology/ Vol 55, 2020- Issue 7
5. "Recyclable glutaraldehyde cross-linked polymeric tannin to sequester hexavalent uranium from aqueous solution"; Journal of Molecular Liquids/ Vol 281, 2019, Pages 29-38.

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