Concordance of Abdominal Computed Tomography with Urinalysis Findings in Pediatrics with Hematuria Resulted from Blunt Abdominal Trauma

Mohammad Mehdi Forouzanfar¹, Behrooz Hashemi¹, Kamran Heydari², Alireza Majidi¹, Sadrolah Mahmoodi³, Anahita Saeedi¹*

¹. Emergency department, Shohadaye Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
². Emergency department, Loghmane Hakim Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
³. Emergency department, Baqiyatallah Hospital, Baqiyatallah University of Medical Sciences, Tehran, Iran

*Corresponding author: Anahita Saeedi; Emergency department, Shohadaye Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Tel: 09113394123 Email: saeedianahita@gmail.com

Abstract

Introduction: The present study compares the diagnostic accuracy of urinalysis with computed tomography (CT) scan in pediatrics with blunt abdominal trauma. The aim of this study was comparing the diagnostic value of urinalysis and abdominal CT scan with contrast, as the gold standard, for predicting probable abdominal organ injury in these patients. Methods: The present diagnostic accuracy study was done on children with blunt abdominal trauma aged less than 16 years who were presented to emergency department and both urinalysis and abdominal CT scan had been done for them. Demographic data, trauma mechanism, and results of urinalysis, ultrasonography and abdominal CT scan regarding abdominal organs were recorded. To evaluate the diagnostic power of urinalysis, statistical indices such as sensitivity, specificity, positive and negative predictive value were used. Results: In this study, 70 children under 16 years old who visited ED were evaluated. Mean age of the studied population was 7.1 ± 4.86 years and 48 of the patients (68.6%) were male. The correlation between hematuria and positive CT scan findings was confirmed. Sensitivity, specificity and positive and negative predictive values of hematuria were calculated to be 26.67%, 92.73%, 50% and 82.26%, respectively. Conclusion: Based on the results of the present study, although presence of hematuria has acceptable specificity, its sensitivity is very low compared to CT scan for prediction of abdominal organ injuries in pediatrics with blunt abdominal trauma. In other words, absence of hematuria is not a good reference to dismiss abdominal organ injury, yet its presence can be an indicator of serious injury.

Key words: Wounds, nonpenetrating; abdomen; abdominal injuries; urinalysis; tomography, x-ray computed