Diagnosing Appendicitis at Different Time Points in Children with Right Lower Quadrant Pain: Comparison Between Pediatric Appendicitis Score and the Alvarado Score: Reply

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Reply,

We appreciate the interest and important comments on our article regarding comparison of the Pediatric Appendicitis Score (PAS) and Alvarado score in diagnosing appendicitis in children [1]. In both scoring systems, leukocytosis is one of the variables (PAS score gives 1 point to white blood cell (WBC) $>10 \times 10^9/L$; Alvarado score gives 2 points to WBC $>10.4 \times 10^9/L$). The upper limit of WBC count does show different normal ranges in different age groups [2]. The upper limit of WBC at age six is 14.5 ($\times 10^9/L$) and at age 12 it is 13.5 ($\times 10^9/L$), and after 12 years WBC returns to adult levels [2]. However, neither or the scoring systems mentions the different cutoff values of WBC counts in predicting acute appendicitis for children younger than 12 years of age. This issue indeed should be considered because it may influence the definitive diagnostic value of the clinical scores in children younger than 12. It is essential and should be helpful to establish the different cutoff WBC counts based on the different age groups in the future.

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Among 1,395 patients, 645 boys (46.2 %) and 750 girls (53.8 %), in our study, 881 had histologically proven acute appendicitis, and 514 had normal appendices. Final diagnosis in the non-appendicitis patients with scores greater than 6 most commonly was infectious enteritis (the Alvarado score, 17.3 %; the PAS, 18.5 %). Pelvic inflammatory disease and ruptured tubo-ovarian abscess account for less than 3 %. Indeed, menstruating patients have a higher incidence of these diseases than non-menstruating girls. The significance of menstruation in the scoring system demands further research to validate.

In general, both the PAS and the Alvarado score are helpful clinical scoring systems in diagnosing appendicitis with similar criteria except two variables. Although Schneider and et al. [3] point out that neither method provides sufficient positive predictive value to be used in clinical practice as the sole method for determination of the need for surgery, we believe the different time points of abdominal pain presentation could be associated with the diagnostic value of clinical scoring systems for acute appendicitis. Further, the best cutoff score of both the Alvarado and PAS systems could vary with the different time points.

References

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