Comment on Ahsan Ali Syed et al (J Pak Med Assoc 2017; 67: 400-404)

Frequency of worsening liver function in severe dengue hepatitis patients receiving paracetamol: A retrospective analysis of hospital data

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Madam, I read with interest the article by Syed AA et al. in the March 2017 issue of Journal of Pakistan Medical Association.[1] However, I have a few concerns regarding the methods used in this article. Firstly, a major flaw in the analysis is that Wilcoxon ranked-sum test (Mann-Whitney U test) is used while the study was a matched analysis in a before-after setting of the same participants.[2,3] In this situation, Wilcoxon signed rank test should have been used rather than the rank-sum test. Besides, the authors have not reported studying the normality of distribution of ALT values at baseline and end before selecting a non-parametric test.

Secondly, the authors report a difference of 340 U/L in alanine aminotransferase (ALT) levels but they haven't mentioned the limitation that this improvement in levels after paracetamol use may not be valid since they did not adjust for major or all confounding factors in their analysis through multivariate linear regression methods. Confounders could include, for example, age, gender, smoking and any other drug use either before or during hospital stay. Besides, they also haven't adjusted for the route, dose or duration of paracetamol use in sensitivity analyses to ascertain if paracetamol use as yes or no has an association with ALT levels independent of variation in these factors.

Thirdly, the manuscript could have been strengthened if the authors would have conducted a dose-response analysis/graph related to the dose of paracetamol administration to support a cause-effect relationship attributing the improvement in ALT levels to paracetamol use because currently they report only univariate, unadjusted associations in an observational setting.

I conclude that with inappropriate test used for statistical analysis and epidemiological limitations not considered in the discussion, the authors should clarify their view-point in this regard and/or justify the methods they have used.

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References

1. Syed AA, Aslam F, Hakeem H, Siddiqui F, Nasir N. Frequency of worsening liver function in severe dengue hepatitis patients receiving paracetamol: A retrospective analysis of hospital data. J Pak Med Assoc 2017; 67: 400-4.
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3. Wikipedia. Mann-Whitney U test. online] [cited 2017 March 17]. Available from: URL: https://en.wikipedia.org/wiki/Mann%E2%80%93Whitney_U_test.

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