Reviewer's report

Title: Can the FAST and ROSIER adult stroke recognition tools be applied to confirmed childhood arterial ischemic stroke?

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Reviewer: Mubeen Rafay

Reviewer's report:

The authors have studied an important emerging topic in the area of pediatric stroke. Arterial ischemic stroke recognition is challenging in children. Recent literature has identified significant delays in the investigation and management of children with stroke, including a recent paper by the authors of the current manuscript. The delays are mostly related to challenges faced by frontline medical staff in the differentiating stroke from other common stroke mimics in children which is contrary to adults. The use of adult tools such as FACE or ROSIER to identify children who should be investigated with urgent neuroimaging to confirm a stroke diagnosis will be helpful in avoiding and decreasing unnecessary delay in the treatment of children with confirmed stroke.

In the current study, authors applied adult stroke recognition tools FAST and ROSIER in 47 children with ischemic stroke and demonstrated comparable sensitivity and specificity in children in recognizing signs and symptoms of stroke. However, a control group consisting of children with similar presentation but different neurologic diagnosis (the so called stroke mimics) were not included. Due to the lack of a control group, the specificity and sensitivity of these tools can not be accurately determined. Considering that stroke mimics are a frequent occurrence in a pediatric emergency compared to ischemic stroke, a comparison group can be easily included in the analysis and will add significant weight to the results of this study. Although the application of these tools will greatly improve diagnosis and delays in stroke diagnosis in children, lack of a comparison group does not allow calculation of the negative and positive predictive values which are important in determining the significance and value of these tools in screening children with ischemic stroke presentations. A case control study will be the most suitable study design to study the utility of these tools in children in clinical practice.

As the authors themselves rightly pointed out in the paper, this is an important new topic in pediatric stroke which requires more in depth analysis to determine how these tools can distinguish stroke from non-stroke. I encourage authors to include a comparison group in the analysis which will add weight to this study and address most of the concerns.

In addition, it would be beneficial to use appropriate statistical analytical methods including calculation of negative and positive predictive values.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests