



The authors' reply to comments on "dengue management in triage using ultrasound in children from Cambodia: A prospective cohort study"

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We thank the authors of this correspondence for their efforts in care of dengue patients and interest in our article.¹ It is accepted that dengue can cause plasma leakage detectable by sonography, but there are unanswered questions regarding its usefulness. Our patient cohort and was somewhat unique compared with most prior research inclusive of that cited by the authors. We studied outpatient pediatric subjects with suspected dengue who were early in the course of their illness, and we utilized point-of-care ultrasound (POCUS) at triage. Our question was if early findings could predict not severe dengue per se, but any progression of illness and need for subsequent unplanned medical visits or hospitalizations. Discharged subjects who had a thickened gallbladder wall were more likely to have an unplanned visit or admission versus subjects with a normal gallbladder wall, 67% ($n/N = 12/18$) versus 17% ($n/N = 30/172$), $p \leq 0.0001$. Interestingly, the most comparable previous research of outpatient dengue patients using POCUS also found a relationship between sonographic findings and disease progression, with gallbladder wall thickening the most common finding.²

Clinical guidelines are understandably imperfect. Laboratory testing may be delayed, unavailable, and not predictive of disease progression. We believe ultrasonography has promise as an adjunctive study in managing dengue patients, but wholly agree with the authors that further efforts are needed to evaluate and potentially standardize its use in dengue. POCUS has long been useful for clinicians as a real-time procedural, diagnostic, and screening tool.³ In dengue, its potential

utility seems greatest as a diagnostic adjunct and prediction tool in less differentiated and less severe patients, more so than hospitalized, critical patients with an established diagnosis. Identification of at-risk patients could facilitate earlier treatment, referrals, and management of resources. FAST and gallbladder exams identify the most common sonographic findings associated with dengue and can be mastered by frontline clinicians. We are in accord that such ultrasound protocols should be prospectively studied with focus on patient outcomes and resource utilization.

Contributors

TG drafted the authors' reply. RG, YP, EH, RL, AS, VP, MH revised the manuscript and approved the version before submission.

Declaration of interests

All authors declare no competing financial or personal interests.

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