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## Intravenous Acetaminophen vs Intravenous Diclofenac in the Management of Painful Crisis in Sickle Cell Disease

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We appreciate Panda, et al. [1] for their work on efficacy of intravenous (IV) acetaminophen and diclofenac for the management of pain in patients with Sickle cell disease (SCD) vaso-occlusive crisis (VOC). However, we would like to comment on few aspects of this article.

- i) In the Introduction section, authors have mentioned “*IV diclofenac is the current standard of care for management of skeletal VOCs in SCD*” [1] but the guidelines suggest the management of acute pain in sickle cell VOC is based on the severity of pain. In patients with mild to moderate pain, non-steroidal anti-inflammatory drugs (NSAIDs) can be used, unless contraindicated, whereas opioids are recommended as first line drugs in patients with severe pain [2].
- ii) Authors have stated that oral NSAIDs are associated with gastric side effects [1]. The primary mechanism of gastritis by NSAIDs is by inhibition of prostaglandin production which is caused by both oral and parenteral NSAIDs [3]. Albeit less common, the risk of gastritis with parenteral NSAIDs cannot be ruled out.
- iii) IV acetaminophen dose ranges from 10-15 mg/kg/dose and its effect lasts for 4-6 hours [4]. We fail to understand why paracetamol was given at 10 mg/kg/dose at 8-hour intervals.
- iv) In the methodology section, authors have mentioned that patients who did not improve after home-based care and were symptomatic within 24 hours were included in this study. Many of these patients would have taken oral NSAIDs, particularly diclofenac, before reaching hospital. These patients should have been excluded from the study, as this could have an impact on the overall response rate.
- v) In the result section, we found only 5 (4.91%) patients required add on therapy out of 102 patients included in this study, which signifies a remarkable response to both these drugs in acute crisis. Mean (SD) number doses required for complete relief of pain were 6 (4) and 8 (4) in the acetaminophen and diclofenac group, respectively. In our opinion patients who had more than 50% reduction in pain within 24 hours could have been switched over to oral drugs rather than prolonged parenteral therapy.

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### AUTHORS' REPLY

- i) We agree that opioids are still the standard of care for severe pain in SCD skeletal VOC, but IV diclofenac is the current standard of care for management of skeletal VOCs among HbSS children in our center, as opiates are not freely and continuously available, there is a lack of manpower to closely monitor respiratory depression in a high volume center, severe constipation with regular usage of opiates, more likelihood to develop opioid dependence in patients with severe and frequent VOCs, and gastric side effects with regular usage of oral NSAIDs. Moreover, we had observed that most patients coming to us with mild to moderate pain had already taken oral NSAIDs without relief.  
 Thus, due to non-availability of opioids, observed non-response to oral NSAIDs, and possibility of nephropathy with chronic diclofenac use, we planned this study.
- ii) We agree with this statement.
- iii) The dose range of IV paracetamol is 10-15 mg/kg/dose with duration varying from 4 to 8 hour, depending upon the situation. We enrolled only those patients who responded to 8-hourly regimen, for ease of analysis.
- iv) We included only those patients who had not received any medications, and home-based care means only taking sufficient fluid and restricted outdoor activities to prevent dehydration.
- v) We agree that patients who had more than 50% reduction in