Vitamin D and anesthesia: Is our present knowledge sufficient?

The therapeutic role of vitamin D in chronic pain associated with sickle cell disease (SCD) is well-established.[1] However, its role in acute pain during SCD crises is investigational and no conclusions can be drawn with the available evidence.[2] Recently, McNally *et al*.,[3] observed that, postoperatively, most patient's with congenital heart disease undergoing corrective surgeries were vitamin D deficient, probably due to low preoperative levels and a significant intraoperative decline. No definitive relationship could be established between the deficiency and analgesic requirements. The authors of present study have focused upon a completely unexplored aspect of vitamin D supplementation on analgesic requirements.[4] There is demonstrable evidence to validate the efficacy of vitamin D in managing the pain of diabetic and other neuropathies.[5,6] Could it be that vitamin D has adjuvant analgesic properties? In the present study, treatment of vitamin D deficiency led to significant falls in analgesic requirements.[5] It is also possible that sickle cell patients with vitamin D deficiency often have defective bone mineralization, which in turn can lead to chronic pain (requiring treatment) and heightened perioperative analgesic requirements. It would be interesting to see future studies comparing analgesic demands in relation to preoperative vitamin D levels. The authors also found significantly lower heart rate in these patients with increased sedation levels. Interestingly, no narcotic was used in induction or for analgesia and the only sedative used was inhalation agent for induction and maintenance. These findings again pose questions for future research for interaction of inhalation agents in relation to vitamin D levels.

Additionally, anti-inflammatory properties of vitamin D are well-known.[6] This property could potentially lower postoperative pain by suppressing surgical site inflammation. We support the authors in treating preoperative vitamin D deficiency prior to surgery for multiple additional benefits. This, however, with presently available limited evidence does not justify routine testing or correcting vitamin D levels during preanesthetic checkup in patients without SCD undergoing surgery. SCD often predisposes to infections (patients either undergo surgical splenectomy or even auto splenectomy) and vitamin D has well-established role in optimal functioning of immune system.[7] In conclusion, even though the results of the present study need further elucidation of mechanisms, they certainly open the possibility of yet another supplementary option to manage pain of SCD.

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