Neuraxial Blockade in the Management of Sickle Cell Crisis during Pregnancy

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Introduction: Epidural analgesia in management of sickle cell crisis during labor has been widely described but its utility managing sickle cell crisis in non-laboring pts is not well defined.

Case: A 20 year-old G3P0 female with sickle cell anemia was admitted at 29 4/7 wks with acute vaso-occlusive crisis after presenting with severe bilateral lumbar and lower extremity pain characterized as 10/10 in intensity. The patient's medical history was remarkable for asthma, G6PD deficiency, and multiple hospitalizations for acute sickle cell crises. Her initial vital signs were unremarkable, and she denied fevers, dyspnea, chest pain, dysuria and motor changes. Initial attempts to manage the patient's pain with intravenous hydromorphone were unsuccessful, and the patient became unresponsive to voice and sternal rub 4 times during a 15-minute period after receiving a total of 18 mg of hydromorphone within 2 hours. Each episode of unresponsiveness persisted less than 10 seconds, and spontaneous ventilation and hemodynamic stability were maintained. A fentanyl PCA regimen was initiated without success, and her pain scores remained 10/10. An epidural catheter was inserted at the L4/L5 interspace without complications. Patient-controlled epidural analgesia was initiated with 0.125% bupivacaine and fentanyl 2 mcg ml-1. The patient reported a decrease in the intensity and persistence of her lower extremity and back pain after the initiation of neuraxial analgesia. Intravenous opioid requirements during the period of epidural analgesia were substantially lower in comparison to the period immediately prior to epidural placement, and no additional episodes of unresponsiveness or impending respiratory compromise were observed. The epidural catheter was removed on her 4th inpatient day and she was transitioned to an oral opioid regimen for continued analgesia.

Discussion: Epidural analgesia in management of sickle cell crisis during labor has been widely described but the utility of epidural analgesia in managing sickle cell crisis in non-laboring pregnant patients has not been widely established. Frequent administration of high dose parenteral opioids during pregnancy is associated with a greater risk of maternal hypoventilation and aspiration, and may unnecessarily contribute to the development of acute chest syndrome and other pulmonary complications. Epidural local anesthetic administration is a viable alternative to escalating doses of opioids, and may improve the quality of analgesia while minimizing the risk of maternal pulmonary complications.

Citations