E-Poster

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Opioid Management in a Traumatic Brain Injury Patient With Substance Use Disorder: A Case Report

Topic: Pain

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BACKGROUND

The interplay between chronic pain, cognition, and use of opioid agents has not been fully elucidated. Such a framework can be especially useful to guide pain management in patients with a traumatic brain injury (TBI) who have existing impairments in attention, concentration, memory, and problem-solving. Furthermore, TBI and substance use disorders frequently co-exist and TBI patients receiving opioids may be at risk of developing opioid dependency.

CASE DESCRIPTION

A 24-year-old female with alcohol use disorder suffered a traumatic brain injury due to a motor vehicle collision eight weeks prior to her admission to an inpatient rehabilitation program. Her injuries included a subarachnoid hemorrhage, a right temporal lobe contusion, an open right tibia/fibula fracture, as well as multiple abdominal injuries. The patient was noted to have severe cognitive communication deficits, agitation, verbal disinhibition, and emotional lability. It was suspected pain was a contributory factor to her behavioral presentation. During her acute care stay, she had been started on lithium presumably to help manage her agitation, and a pain regimen consisting of celecoxib, pregabalin, and methadone. Due to these medications possibly limiting her cognitive recovery, lithium was gradually discontinued, and weaning of methadone and pregabalin was started. As the methadone dose was lowered, a subsequent increase in her agitation was noted for which SSRI therapy was initiated with resulting improvement in her restlessness.

DISCUSSION

It is estimated that more than 50% of TBI patients suffer from chronic pain. The short- and long-term effects of opioid medications on cognition remain unclear and there is a lack of guidelines for opioid management in TBI patients who have impairments in long-term memory, processing speed, and executive functions. Furthermore, TBI patients may be predisposed to developing risky substance use and up to 20% of TBI patients become dependent on an illicit substance within two years of injury. Recently, a two-hit theory was proposed that hypothesizes a TBI “first hit” results in a neuroinflammatory process while subsequent opioid exposure “second hit” exacerbates neurodegeneration and modifies synaptic plasticity in the reward circuit.

CONCLUSION

Increased caution must be taken when utilizing opioid medications in TBI patients, especially individuals with substance use history. Clinical guidelines for opioid management in TBI patients are needed with the goal of achieving adequate pain relief and maximizing cognitive recovery while minimizing the risk of opioid-related adverse events.

Statement of Disclosures

None

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