Creating an Outpatient: A Multimodal Approach to Opiate Wean in Complex Pediatric Cancer Pain

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Introduction

Cancer is the second leading cause of death in children. Severe and difficult to control pain often presents in end-stage cancer, particularly at the end of life. Wolfe et al estimated "89% of children (with cancer) experienced substantial suffering... with fewer than 30% of parents reporting treatment for pain as successful". Treatment of pain in this patient population often requires a multimodal approach to achieve adequate analgesia while minimizing side effects.

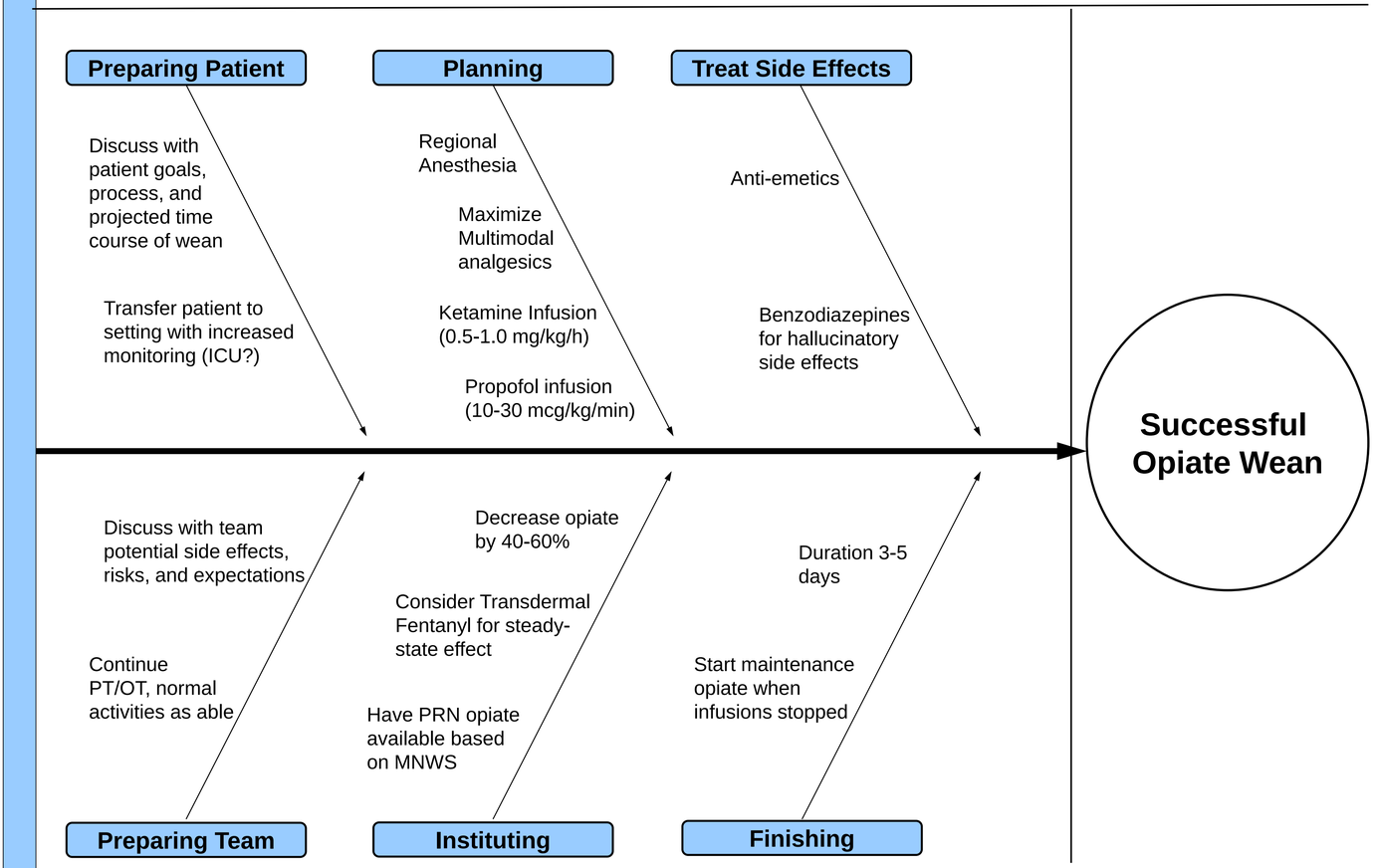
Case Report

We present a 16-year-old female with a history of Ewing Sarcoma of the pelvis with metastatic lesions to her left distal femur. She had recently been admitted due to inability to control pain on an oral regimen, and was discharged home on a hydromorphone PCA by the Pediatric Oncology service.

She was readmitted shortly thereafter with a pain crisis of her distal femur lesions requiring large escalations in her opiate needs with decreasing efficacy. In addition to her parenteral opioids, she was on maximal adjunct analgesic therapy involving a combination of NSAIDs, Acetaminophen, Serotonin-regulating medications, Topical Local anesthetics, and physical and psychological therapies. Our pediatric acute pain team was consulted to assist in transitioning from her home hydromorphone PCA regimen to an oral regimen in hopes of qualifying for a phase I clinical trial at an outside institution.

She had previously failed attempts at oral (MS Contin, Oxycodone) and transcutaneous (Fentanyl patch) opioid therapy due to uncontrollable emesis and inadequate pain relief. It was determined she was not a candidate for an intrathecal pump by our interventional pain colleagues. Eventually, she was transferred to our intensive care unit, where a femoral nerve catheter was placed and Ropivacaine was infused. In addition, ketamine and Propofol infusions were started to aid in an expedited wean of her opioid tolerance and help with intractable nausea and vomiting.

While on these infusions, she was able to maintain normal cognition and participate in physical therapy. Prior to her opioid wean she had used 258mg morphine equivalents in the previous 24h, consisting primarily of hydromorphone. At discharge, 2 weeks after starting her opioid wean, she was on a stable oral/transdermal regimen of 145mg morphine equivalents per 24 hours consisting of a fentanyl patch and oral methadone which she tolerated without significant side effects. At discharge, she was transferred to an outside hospital institution for evaluation for a phase I clinical trial.



Discussion

Cancer related pain can be difficult to control, particularly in the pediatric population. These patients often exhibit rapid increases in their opioid needs as their disease process progresses, particularly evident at the end of life.

For this vulnerable population, anesthesiologists and pain physicians can play a critical role in the management of their chronic and acute on chronic pain needs. Regional Anesthesia, Ketamine, and Propofol infusions offer a unique way to potentially lessen opioid tolerance and hyperalgesia in patients with refractory cancer-related pain, leading to an overall improvement in quality of life.

Take Home Points

- Requires multi-disciplinary coordination between providers
- Plan opiate wean schedule
- Maximize non-opiate treatment modalities (eg. Regional anesthesia, Ketamine, and Propofol)
- Have PRN medications available for treatment of side effects and withdrawal
- Establish maintenance opiate at conclusion of wean

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