Oral Transmucosal Fentanyl Citrate in the Outpatient Management of Severe Cancer Pain Crises: A Retrospective Case Series

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Background
- Severe exacerbations of pain are a problematic clinical occurrence in opioid-tolerant cancer patients.
- Guidelines from the National Cancer Care Network (NCCN) suggest using parenteral opioids for the treatment of severe pain exacerbations (pain crises).
- However, parental opioids are inconvenient, and the use of parental opioids is often associated with the cost of an inpatient hospital stay.
- Oral transmucosal fentanyl citrate (OTFC) is a short-acting opioid fentanyl that is approved by the Food and Drug Administration for the treatment of breakthrough pain in opioid-tolerant cancer patients.
- OTFC may offer a less expensive, more convenient alternative to parental opioids; however, OTFC has not been specifically studied in patients with pain crises who otherwise would have received parenteral opioids.

Methods
- A retrospective chart review was undertaken to assess the use of OTFC for patients in pain crises.
- Over a 3-month time period, 39 opioid-tolerant patients received OTFC for severe exacerbations of pain.
- The charts of these patients were scored for diagnosis, baseline opioid usage, pre-OTFC pain sores (0-10 Visual Numeric Scale (VNS)), OTFC dose and quantity, and post-OTFC pain scores.
- Whether patients were sent to the emergency center and/or admitted to the hospital that day was documented, as well as any adverse events following OTFC administration.

Results
- Mean patient age was 54.6 years, with an approximately equal distribution of men and women.
- Mean oral morphine equivalent daily dosage was 265.6 mg/day (standard deviation = 176.6 mg/day).
- Mean pre-OTFC pain score was 9.0.
- The most common OTFC dose was 400 mcg (range 200-600 mcg), with four patients requiring a second dose within half an hour due to continued high level of pain.
- Post-OTFC pain scores were significantly lower than pre-OTFC scores (3.0 vs. 9.0, p<0.001).
- 7 patients went to the emergency clinic, and 3 were admitted to the hospital on the day of the visit.
- There was no difference in analgesia among different pain types (nociceptive, neuropathic, or mixed).
- Side effects such as oversedation, nausea, vomiting, or respiratory depression were not noted; however, there was no specific monitoring protocol for these toxicities.

Authors’ Conclusions
- OTFC has been shown to have good efficacy for breakthrough pain in opioid-tolerant cancer patients.
In this study, there were no reported toxicities associated with giving OTFC to opioid-tolerant patients; however, the overall numbers were small.

OTFC provides rapid onset analgesia through transmucosal absorption, with maximum serum concentration attained by 40 minutes at low doses (200 mcg) and by 20 minutes at high doses (1600 mcg).

OTFC has been shown in previous studies to be more effective for acute pain relief than immediate-release oral morphine for breakthrough pain.

The effective dose of OTFC was not proportional to a patient's daily opioid consumption.

Many of the patients treated with OTFC in this study probably avoided emergency center visits and/or inpatient hospitalizations.

The use of OTFC may allow physicians to more accurately evaluate patients while treating their pain.

Compared to parental opioids, OTFC offers a more convenient and equally safe option for pain crises in these patients.

**Discussion**

This article provides some important data on the effectiveness and tolerability of OTFC in opioid-tolerant patients experiencing pain crises. The patients treated in this study achieved a high level of pain relief in a more convenient and cost-effective manner than with parental opioids. In addition, OTFC appeared to be very well tolerated in these patients; however, the evaluation of these toxicities was not formalized. It is important to keep in mind that this was a retrospective analysis, and it is likely that the patients treated in this report are not representative of the general population. Nevertheless, OTFC remains an attractive option in this group of patients. In light of the low number of toxicities seen, it would be reasonable to try OTFC in patients with pain crises, and to reserve parental opioids for patients who do not respond to OTFC.