

Fentanyl Absorption from Fentanyl Buccal Soluble Film (FBSF) In The Presence of Mucositis

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Purpose

Oral mucositis is ulceration of the oral mucosa that may occur when patients with cancer receive chemotherapy and/or radiation therapy. The presence of mucositis has a number of clinical implications for patients: the patient's ability to drink, eat, and swallow may be impaired; there may be an increased risk in developing infections of the mouth; and patients may experience pain from mucositis or BTP, the transitory flare of pain that occurs in otherwise stable, persistent pain related to their cancer pain. BTP is commonly treated by opioids such as fentanyl delivered via the buccal mucosa. In 2009, FBSF was approved for treatment of BTP. FBSF consists of a small, bilayered, water-soluble polymer film (BioErodible MucoAdhesive; BEMA), commercially available as Onsolis, that adheres to the buccal mucosa and rapidly delivers fentanyl to the systemic circulation. The objectives of this study were to evaluate the absorption of fentanyl from FBSF in patients with and without Grade 1 mucositis and to assess the tolerability of FBSF in these patients.

Method

In an open-label, single-dose study, two groups of patients with cancer received a 200 µg dose of FBSF. Cohort 1 (n = 7) had Grade 1 mucositis, and Cohort 2 (n = 7) were age- and gender-matched controls without mucositis. FBSF was applied by study personnel to either the area of the mucosa that was inflamed or, in patients without mucositis, to an area of the mucosa similar to the site used for the matched patient. Opioid tolerance was not an inclusion criterion for this study. Serial blood samples for analysis of fentanyl plasma concentrations were collected immediately prior to application of FBSF and for 4 hours post-dosing. All patients were monitored for safety throughout the study and were serially questioned regarding irritation at the application site.

Results

C_{max} and AUC_{0-4} values for patients in the mucositis cohort were 32% and 12% lower, respectively, than in patients without mucositis. All patients with mucositis at the beginning of the study became pain free. There was no application site irritation reported in any patient, regardless of mucositis status. Film dissolution in most patients occurred in less than 30 minutes regardless of the buccal mucosa status, and there was no evidence of any relationship between C_{max} and dissolution times. Mild somnolence was reported by two patients with mucositis but did not appear to be related to fentanyl plasma concentrations. Also, after administration of FBSF, no AEs relating to the oral mucosa were reported. There were no deaths or serious adverse events reported in this study.

Conclusions

Application of FBSF to an area of Grade 1 mucositis did not result in increased fentanyl plasma concentrations. FBSF was well tolerated at a dose of 200 µg in patients with and without mucositis and did not cause local irritation upon application to an area of Grade 1 mucositis.