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Conversion of chronic pain patients from full-opioid agonists to sublingual buprenorphine

Jonathan Daitch [1], Michael E Frey, David Silver, Carol Mitnick, Danielle Daitch, Joseph Pergolizzi Jr

Affiliations
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Abstract

Background: Sublingual buprenorphine-naloxone (buprenorphine SL) is a preparation that is used to treat opioid dependence. In addition, the Drug Enforcement Administration (DEA) has acknowledged the legality of an off-label use to treat pain with a sublingual buprenorphine preparation. Buprenorphine SL is unique among the opioid class of analgesics; this compound has a high affinity for the mu-receptor, yet only partially activates it. Thus, buprenorphine SL can provide analgesia, yet minimize opioid side effects. Many patients on high doses of traditional opioid medication develop tolerance. Despite escalating medication dosage, a subset of patients had a paradoxical increase in pain, which has been characterized as opioid-induced hyperalgesia (OIH). Buprenorphine SL, on the other hand, may even be anti-hyperalgesic and may have utility in treating these challenging patients.

Objective: To determine the effectiveness of converting patients from traditional full agonist opioid medication to sublingual buprenorphine, as well as to identify patient groups that are most likely to benefit from this therapy. Patients who underwent conversion either had developed tolerance with diminished analgesia or were experiencing side effects on their opioid medications.

Study design: An observational report of outcomes assessment.

Setting: An interventional pain management practice setting in the United States.

Methods: Retrospective data from clinical records was compiled on 104 de-identified chronic pain patients whose personal information had been redacted (60 men and 44 women, aged 21-78) and who had previously been treated with opioid-agonist drugs; they were converted to buprenorphine SL in tablet form during the study. Chronic pain was defined as persistent pain for at least 6 months. Data collected from patient profiles included age, sex, diagnosis, medication history, pre-induction opioid intake, reason for detoxification, pre-induction Clinical Opiate Withdrawal Score (COWS), and if applicable, cause of buprenorphine SL cessation. Pain levels and Quality of Life scores were recorded before and after conversion to buprenorphine SL.

Outcome measures: Level of analgesia for patients who continued conversion to sublingual buprenorphine for more than 2 months.

Results: After initiation of buprenorphine SL therapy for more than 2 months, the mean pain scores on a scale from 0-10 decreased by 2.3 points ($P < 0.001$). Patient Quality of Life (QoL scale) was not significantly affected by buprenorphine SL therapy ($P = 0.14$). The success rate was highest for patients using morphine, oxycodone, and fentanyl before buprenorphine SL induction. These patient groups had a 3.7 point decrease in pain for those taking morphine, a 2.5 point decrease in pain for those taking oxycodone, and a 2.2 point decrease for those taking fentanyl. The smallest pain reduction was seen in the patient group using oxymorphone before conversion with a 1.1 point decrease in pain. Patients taking between 100-199 mg morphine equivalent per day experienced the greatest reduction (2.7 points) in pain scores. Patients taking between 200 and 299 mg morphine equivalent before buprenorphine SL induction exhibited a decrease of over 2 points on

average. Patients taking > 400 mg morphine equivalent reported the smallest reduction in pain scores, on average a 1.1 point decrease.

Limitations: This study is limited by its observational nature.

Conclusions: Patients continuing buprenorphine SL therapy for more than 60 days reported significant decreases in pain (2.3 points). Patients on doses of opioid medication between 100-199 mg morphine equivalents seemed to fare better with conversion to buprenorphine SL than patients on the highest doses (> 400 mg morphine equivalents). The opioid drug used by the patient before buprenorphine SL induction appears to have some effect on buprenorphine SL conversion success. Patients previously taking morphine, oxycodone, and fentanyl had the greatest decrease in pain after conversion to buprenorphine SL.

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