

## **Comparison of the effect of sublingual buprenorphine and intravenous fentanyl pump in controlling pain after open cholecystectomy surgery**

### **Abstract**

**Background and Objective:** Proper management of pain in patients post surgery deal to improvement in patients quality of life, sooner discharge and return to life, reduction of hospitalization time and reducing threapautical costs. The present study aimed to compare the effect of sublingual buprenorphine and intravenous fentanyl pump on postoperative open Cholecystectomy surgery pain control.

**Materials and Methods:** The present study is a randomised, double-blind clinical trial. Patients were 20-50 years old ASA 1,2 and all candidates for open cholecystectomy surgery undergoing general anesthesia and divided in two groups randomly. The first group (40 patients) received normal saline pump and sublingual buprenorphine which repeated 6 ,12 and 18 hours after the first dose and continued pump PCA up to 24 hours .In the second group, 40 patients received fentanyl pump and placebo tablets, and the pump was used to inject PCA up to 24 hours. Then, VRS (Verbal Rating Scale) pain score, vomiting-nausea, quantity of sedation (from ramsay sedation scale), and the amount of analgesia need for pain control at 0 ,2, 6, 12,18 and 24 hours, and postoperative analgesia (time of the first need to pain killer) were evaluated. Finally, all patient information was entered into a pre-designed checklist and all data were analysed using the SPSS(statistical package for the social sciences) v20 statistical analysis program.

**Results:** The mean age of patients in buprenorphine group was  $44.8 \pm 5.5$  and in fentanyl group was  $42.8 \pm 7.1$  years. 22.5% of patients in buprenorphine group and 35.5% in fentanyl group were male and rest were female. 22.5% of patients in each two group had history of surgery. At 6 and 24 hours after surgery, the amount of pain according to the VRS index in the buprenorphine group was significantly lower than the fentanyl group ( $p=0/005$ ), ( $p=0/002$ ) and the analgesic dose was higher in the fentanyl group than the other group.. At primery hours

after surgery (at 2 and 6 hours) the rate of vomiting and nausea in buprenorphine group was less than fentanyl group but not significant.

**Conclusion:** The results of this study showed that buprenorphine is an effective drug in reducing postoperative pain in patients undergoing surgery and, due to its very low side effects, it can be used routinely in patients candidate for cholecystectomy.

**Keywords:** pain, buprenorphine sublingual, fentanyl, VRS, PCA.