

# POST-OPERATIVE PAIN RELIEF WITH BUPRENORPHINE

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## SUMMARY

Buprenorphine is a synthetic opiate analgesic with partial agonist and antagonist properties. It is a derivative of the opium alkaloid — Thebaine and has been found to be effective in relieving moderate to severe pain associated with surgical procedures.

## Introduction

The discovery of opiate receptors in central nervous system was followed by animal experimentation injecting morphine intrathecally. The action was predominantly on pre and post-synaptic membranes of Lamina 2 and 5 of the spinal cord horn. Clinical application showed that small doses of intradural morphine produced effective and prolonged analgesia when administered intrathecally or extradurally.

## Material and Methods

Two hundred patients of ISA grade I to II undergoing various gynaecological operations or caesareans were included in this study.

Spinal extradural block was performed, in left lateral position at L3, L4 level with 5% Xylocaine, quantity ranging

between 1 to 1.2 ml and alongwith it 0.1 mg. of morphine was also injected.

Epidural block was performed with 20 ml. of 0.5% Xylocaine, and 0.1 mg. of morphine was injected epidurally. Pulse blood pressure and respiration were closely monitored following the blockade.

## Observations

TABLE - I  
AGEWISE DISTRIBUTION OF PATIENTS

Age Group	Number
20 - 30 years	45
31 - 40 years	50
41 - 50 years	50
51 - 60 years	55

The youngest patient was 20 years while the oldest was sixty years old.

The details of surgical procedures has been shown in details in Table II shown below.

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**TABLE - II**  
**TYPE OF SURGERY**

Ovarian Cysts	10
Caesareans	40
Hysterectomies	150
i) Vaginal	40
ii) Abdominal	110

**TABLE - III**  
**SIDE EFFECTS**

Nausea	5 Cases
Vomiting	5 Cases

Nausea and vomiting were encountered in 5 cases each.

#### *Changes During Surgery*

There was no appreciable change in the blood pressure, or pulse rate during surgery and none of the patients or neonates had respiratory depression.

#### *Duration of Analgesia*

The duration of analgesia ranged between 36 to 40 hours.

#### *Discussion*

Spinal and epidural blocks are the commonest type of anaesthesia used for Gynaecological surgery as well as few selected cases of caesarean sections and opiates have been used intra as well as extradurally as analgesic to relieve postoperative pain.

Studies indicate that buprenorphine can safely be administered intra or extradurally. Its high lipid solubility and high affinity for steroid receptors are attributes that suggest that it may be more advantageous than morphine. Its affinity for opiate receptors is said to be 50 times greater than morphine. Even when used extradurally the drug crosses from extradural to intradural space to produce its

effect on Spinal cord receptors.

As the inherent risk of respiratory depression associated with the drug can not be ruled out, it has to be used cautiously in patients with impaired respiratory function and when dealing with a pregnant patient. For this reason, many authors advocate injecting the drug locally only after delivery of the baby. Fortunately, in the present series, no such complication was encountered though the drug was injected simultaneously along with the local agent.

Buprenorphine has also been tried sublingually to relieve the post-operative pain and has been found to be quite effective.

Though a large number of analgesic agents are available for the management of post-operative pain the choice naturally goes in favour of one with less side effects and a longer lasting analgesia. Though local administration of buprenorphine demands a close watch on blood pressure, pulse rate and respiratory function not only during operation but in post-operative period as well the drug is worth giving a trial since it is an effective analgesic and certainly avoids the discomfort of repeated conventional intramuscular narcotics. Lack of motor blockade, cardiovascular stability, minimum side effects and ease of administration speak in favour of this simple method of relieving pain.

Minor complications like nausea, vomiting, dizziness and urinary retention were reported with the use of morphine but the incidence was almost negligible in this series. The indwelling urinary drainage for 24 hours following hysterectomy or caesareans alleviated the problem of urinary retention reported by many authors.