MATERIAL & METHOD
SELECTION OF PATIENTS:

This study is based on the healthy patients (Grade I and II, A.S.A. classification) admitted in Medical College Hospital, Jhansi, undergoing all types of major surgical procedures, except caesarean section because of high risk of foetal respiratory depression.

These patients were divided into three groups A, B and C and each group was subjected to the different combination of neuroleptanalgesic drugs.

The patients of group A were given Droperidol and Fentanyl (THEMIS CHEMICALS LTD.).

The patients of group B were given Droperidol and Pentazocine (RANBAXY LABS.).

The patients of group C were given Droperidol Fentanyl and Pentazocine.

PREPERATION OF PATIENTS:

A thorough preanaesthetic check up was done specially to exclude any cardiovascular, respiratory, neurovegetative diseases and supplemented by routine and special investigations as and when needed. Following parameters such as pulse rate and rhythm, blood pressure, respiratory frequency, tidal volume and minute volume were checked and recorded. Informed consent for general anaesthesia was taken. All patients were kept fasting for 6-8 hours.
PREMEDICATION OF PATIENTS:

All patients were premedicated 1 hour before surgery with 2.5 mg. Droperidol, 0.05 mg. Fentanyl (Group A and C) or 30 mg Pentazocine (group B) and Atropine 0.3 mg to 0.6 mg given intramuscularly.

TECHNIQUE:

Patients were connected to electrocardiograph oscilloscope and autorecorder before induction of anaesthesia. Slow intravenous infusion with 5% dextrose started.

Now Droperidol in doses of 0.15 mg kg⁻¹ to 0.18 mg kg⁻¹, was administered slowly intravenously and surgeon was asked to prepare the operative field.

To produce partial denitrogenation a high flow of 100% Oxygen was administered through a face mask for about 3 to 5 minutes, then the inhaled gas mixture was changed to nitrous oxide 6 litres minute⁻¹ and oxygen 2 litres minute⁻¹.

After 7 to 10 minutes of injecting Droperidol, Fentanyl in doses of 0.003 mg kg⁻¹ to 0.004 mg kg⁻¹ to group A and group C or Pentazocine 1.2 mg kg⁻¹ to group B was given intravenously very very slowly. As the patient become unconscious, Succinylcholine was given to facilitate endotracheal intubation. After another 20 to 40 seconds, when mild faciculations caused by succinylcholine had ceased, lungs were inflated with
100% Oxygen through face mask. When the patient was found completely apnoeic and relaxed, direct laryngoscopy was done, 3 to 4 ml of 4% Lignocaine was sprayed on the mucous membrane of pharynx, larynx, and trachea by laryngeal spray, entotracheal tube of the largest possible size was passed and connected to Boyle's mark III anaesthetic machine, through Magill semiclosed circuit using non-rebreathing Rubin valve. The flows of nitrous oxide and Oxygen were changed to 5 litres minute\(^{-1}\) and 3 litres minute\(^{-1}\) respectively. Ventilation was controlled till the return of spontaneous respiration, then it was assisted. Now surgeon was asked to give incision and if patient responded to surgical stimulus manifested in the form of increased pulse rate, respiratory frequency, blood pressure and sweating or movement of toes and fingers, Fentanyl 0.025 to 0.05 mg in group A and group C or 10 to 20 mg Pentazocine to group B was given intravenously to obtain satisfactory analgesia.

When muscle relaxation was needed for the provision of good operative conditions or when there was difficulty in ventilation because of rigid chest wall, flaxedil or tubarine was given in subapnoeic dose and ventilation was assisted.

As the signs of subsiding of analgesia appeared i.e. increased pulse rate, blood pressure, sweating
and movement of toes and fingers, fentanyl 0.05 mg to group A or Pentazocine 10-20 mg to group B and group C was repeated intravenously.

Adequate fluids were given in form of 5% Dextrose, Dextrose saline, Haemacoel, Lomodex, Blood as and when needed to replace blood loss and to prevent fluid defecit.

Just before the end of surgery administration of nitrous oxide was discontinued and patients were ventilated with 100% Oxygen for 2 to 3 minutes. The secretions present in mouth and pharynx were removed.

In cases where muscle relaxants were used, their residual effect was reversed, with the start of skin suturing, with 6 to 8 microgram kg⁻¹ prostigmine and 0.01 mg kg⁻¹ of Atropine and after reversal patients were ventilated with 100% Oxygen to correct Hypoxia.

Next extubation was done and in cases of inadequate spontaneous respiration, nalorphine to group A and Doxapram to group B and group C was given.

10 mg of Nalorphine was diluted in 10 c.c. of distilled water and was given very very slowly upto a maximum of 7 mg. The effect was observed for 3 to 4 hours after injection.

Doxapram 0.5 mg kg⁻¹ of body weight was diluted in 10 c.c. of distilled water and injected slowly, titrating with the adequacy of respiration, as the
respiratory effort reached to a satisfactory level further injection was stopped and patients were given 100% Oxygen to breath. These patients were observed further for 2 to 3 hours, and if the respiration again became insufficient, the dose of Doxapram was repeated.

MEASUREMENTS:

Following parameters were measured and recorded before premedication, just before induction to serve as a control, after 7 to 10 minutes of injection of Droperidol, after 3 to 5 minutes of injection of analgesic agents, during maintenance at frequent intervals in the end of anaesthesia and after Nalorphine or Doxapram if given.

1. **Pulse rate and rhythm**:
   By palpating radial pulsations and counting for 1 minute by same observer.

2. **Blood Pressure**:
   Blood Pressure both Systolic and Diastolic was measured to the nearest 5 mm of Hg by auscultation using the same arm and same mercury manometer. The same observer made the measurement taking care that site of auscultation was always the same.

3. **Electrocardiography**:
   In each patients the electrocardiogram was monitored continuously on an Electrocardiograph oscilloscope (ECIL Bed Side Monitor) which was connected to a
electrocardiograph autorecorder (B.P.L.) and tracing were recorded simultaneously with other measurements using standard limb lead II.

4. **Respiratory Frequency**:
   Counted for one minute period.

5. **Respiratory Minute volume**:
   Minute volume was measured during one minute period using Wright's respirometer and tightly fitting mask in conscious patients and through catheter mounted in anaesthetized patient.

6. **Tidal Volume**:
   Tidal volume was measured using Wright's respirometer, five readings were taken, out of which first two were discarded and average of last three readings was recorded.

7. **Complications** if any in the form of apnoea, chest wall rigidity, bronchospasm, cyanosis, hypotension, or hypertension and abnormal behavioural pattern were also noted and recorded.

Patients were followed for first 48 hours after surgery to record the duration of post operative analgesia, nausea, emesis, extrapyramidal symptoms and/ or behavioural disorder and any other complication.