SUMMARY

The present study was conducted on 60 young adult patients of ASA grade I and II, of either sex, in the age from 20 - 60 years admitted in various surgical wards of M.L.B. Medical College and Hospital, Jhansi. Patients were divided randomly into 2 groups :-

**Group-I** : Patients were induced with Propofol and Ketamine

**Group-II** : Patients were induced with Propofol and fentanyl

Patients were subjected to a thorough preanaesthetic check-up. Required investigation were done and an informed consent was taken. After maintenance of intravenous line, premedication was done with injection glycopyrolate (0.2mg) intravenously, 5 minutes prior to induction and injection midozolam (2.0mg) intravenously, followed by injection glycopyrolate. Patients of group-I were induced with ketamine (0.5mg/Kg body weight) intravenous over a period of 15 seconds followed by propofol (3mg/Kg body weight) intravenous bolus till the end point of induction was reached, infusion of propofol at a rate of 3mg/minute was started immediately with infusion pump. The same induction protocol was followed in group-II except fentanyl (1.0μg/Kg body weight) intravenous, was used for induction of anaesthesia instead
of ketamine. When patients respond to pain a bolus of one fifth of original dose of ketamine was given in group-I and fentanyl in group-II. Airway maintained with head and neck positioning and spontaneous breathing was maintained with air.

The following parameters were observed and recorded:

- Induction time.
- Induction dose and total dose of propofol.
- Top up doses of ketamine and fentanyl.
- Continuous monitoring of pulse rate, arterial blood pressure, respiratory rate and arterial oxygen saturation was done throughout peri-operative period and readings were recorded at following time interval.
  - Before induction
  - One minute after induction
  - Five minutes after induction
  - Ten minutes after induction
  - Twenty minutes after induction
  - Immediate post-operative period.
- Recovery time:- The time at which each patient was able to open the eyes, responds to verbal commands and able
to tell his or her name after the withdrawl of propofol infusion.

- Post operatively patients were enquired about acceptance. Patients were asked if they had slept well and asked about their experience pleasant or unpleasant during the recovery period.

- Post operative pain relief in immediate post-operative period judged by requirement of analgesic in immediate post operative period.

- Side effects or complications.

After analyzing the observed data, following conclusions were made:

i) Propofol and ketamine combination took less time (43.8±5.90 second) for time of onset of induction of anaesthesia in comparison with propofol and fentanyl combination (50.5±6.76 second).

ii) The induction dose and total dose of propofol was less in propofol ketamine i.e. 142.0±12.70mg and 223±10.20 mg respectively group as compared to in propofol fentanyl group where induction and total dose of propofol were 155.0±18.89 mg and 236±12.22.
iii) Number of top-ups of ketamine (2.20±1.4) were less than the number of top ups of fentanyl (3.50±1.8).

iv) Stability of pulse and blood pressure with propofol ketamine combination were comparable and better than with propofol fentanyl combination.

v) In propofol ketamine group respiratory rate was well maintained within normal range and no respiratory depression observed in comparison to propofol fentanyl group where significant respiratory depression was observed.

vi) Maintenance of arterial oxygen saturation was good with both the groups.

vii) Propofol ketamine combination took longer time i.e. 5.0±1.57 minutes for recovery from anaesthesia in comparison with propofol fentanyl combination (i.e. 3.6±1.99 minutes).

viii) Analgesic requirement for post-operative pain relief in immediate post-operative period was less (i.e. 1.6%) in propofol ketamine group in comparison to propofol fentanyl group (i.e. 6.66%).

ix) Incidence of complications like pain on injection, (15%) laryngospasm, (0%) episodes of desaturation,
(1.66%) apnoea, (1.66%) nausea and vomiting (6.66%) are seen with propofol fentanyl combination. Abnormal limb movements (1.66%) and dreams (1.66%) are seen with propofol and ketamine combination.

x) The overall acceptance of anaesthesia was higher with propofol, ketamine (28.33%) than propofol, fentanyl (25%).

So to conclude, combination of propofol and ketamine gives better haemodynamic stability during induction and maintenance of total intravenous anaesthesia. Subanaesthetic doses of ketamine may be an alternative, cheaper analgesic to supplement propofol anaesthesia, instead of short acting potent expensive opioids like fentanyl.