MATERIAL AND METHODS

The present study was conducted in the department of anaesthesiology at M.L.B. Medical College and hospital, Jhansi (U.P.) during year 1991-1992, with the aim to study the blood glucose changes during general anaesthesia in patients undergoing surgery.

Fifty adult indoor patient of either sex between 20-60 years of age scheduled for various elective surgical procedure comprised the material for study.

Patients were devided into four groups of 10 patients each, depending upon the type of anaesthetics used.

Induction of patients of each group was carried out in the same way by thiopentone and suxamethonium for intubation.

The maintenance of anaesthesia was done as follow:-

Group I \[ O_2 + N_2O + Ether \]
Group II \[ O_2 + N_2O + Pancuronium \]
Group III \[ O_2 + N_2O + Gallamine \]
Group IV \[ O_2 + N_2O + Vecuronium \]
patients having any respiratory renal hepatic or cardiac vascular disease were excluded from the study.

All the patient were of physically fit belonging to A.S.A. grade I or II. They were thoroughly examined preoperatively as to their clinical fitness. Routine investigation along with relevant special investigation were accepted for the purpose of study.

An informed written consent was obtained from every selected patients and they were kept empty stomach for at least 12 hours before the induction of anaesthesia.

Premedication consisted of injection atropine 0.06mg intramuscularly 30-45 minutes prior to the induction of anaesthesia.

But first blood sample was taken just before the premedication.

Vein puncture was performed with an 16 or 18 gauze I/V cannula under proper aseptic condition. Any intravenous drip of Ringer Lactate or Saline was started. Dextrose and Dextrose saline infusion was avoided throughout the study period.

Just before induction the IIInd blood sample was taken after recording the pulse, diastolic and systolic blood pressure.
Preoxygenation with 100% oxygen was initiated 3-5 minutes prior to the induction. Induction of anaesthesia was performed with the sleeping dose (4-6mg/kg body weight) of 2.5% thiopentone sodium, slowly till abolition of eye lash reflexes. Intubation was done with proper size cuffed endotrachial tube after injecting suxamethonium in a dose of 1.5 to 2.0mg/kg body weight (80-100mg). The patients were connected to the Boyles Machine using Mapelson 'A' circuit, and ventilated with a gas:oxygen mixture in the ratio of 60:40% respectively, total gas flow being 10 Lts/minute.

Intermittent positive pressure ventilation was continued. IIIrd blood sample was taken out after intubation.

MAINTENANCE OF ANAESTHESIA

Group I (Ether group):- After connecting the patient with Boyle's apparatus anaesthesia was maintained with O₂ and N₂O (40:60) and ether was started and controlled ventilation was continued until the spontaneous respiration resumed IVth blood sample was taken 30 minutes after intubation and administration of ether.
Group II (Pancuronium group):- In this group ether was not used. After connecting the patient with Boyle's apparatus positive pressure ventilation was continued. When the effect of suxamethonium were completely then pancuronium was given in the dose of 0.1mg/kg body weight intravenously to keep the patient relaxed and controlled ventilation continued, top up doses were given when required.

Group III (Gallamine triethiodide):- In this group gallamine triethiodide in the dose of 2mg/kg body weight was given intravenously after the effect of suxamethonium was over in the same manner as in case of group II. Controlled ventilation was continued. Top up doses were given when required.

Group IV (Vencuronium):- In this group the patient received vecuronium in dose of 0.08mg/kg body weight intravenously in the same manner. Top up dose was given when required.

Supplementation dose of fortwin and phenargan was given to maintain the analgesia during surgery, but hyper or hypo ventilation was avoided.
REVERSAL

Reversal of patient group I was spontaneous after the withdrawal of the anaesthetic drugs. For the rest of 4 groups the reversal was needed as follows:-

At the end of surgery when there was return of flickering movement in rebreathing bag the residual relaxant were antagonized with 1.2mg atropine and 2.5mg neostigmine intravenously in all groups except 1st group.

Patients were extubated after establishment of spontaneous respiration. Suction was done for clearing the oral cavity from secretion just before extubation and after extubation. Patients were oxygenated with 100% oxygen for 5 to 10 minutes after extubation. Post operative sample of blood was collected as a fifth sample.

Blood glucose estimation was done with the help of glucometer.