MATERIAL AND METHODS
The study was conducted in the General Surgery O.T., Orthopaedics O.T. and Gynaecology & Obstetrics Operation Theatre of M.L.B. Medical College, Jhansi, during 1991-92.

**Selection of cases**

The patients of AIM Grade I & II, between the age group of 50 to 90 years were selected from General Surgery, Orthopaedics and Obstetrics & Gynaecology wards. Patient's name, age, sex, body weight were noted. All the patients undergoing surgery were examined thoroughly in pre-anæsthetic clinic and wards and advised accordingly.

Routine investigations like estimation of haemoglobin, blood sugar, blood urea and routine and microscopic examination of urine were done. Electrocardiogram and chest X-ray were also done of all the patients. The protocol for this study was institutionally approved and written consent was obtained for each patient.

The pulse oximeter used was the Minolta PULS-OX-6. A light source generated by two LEDs, wavelengths at approximately 660 nm and 940 nm and a photodiode
(finger probe) was mounted on a finger. No heating or "arterialization" technology were required.

Electrocardiography was done by recording on each standard lead I, II, III, augmented leads aVR, aVL, aVF and chest leads V1, V2, V3, V4, V5, V6.

Blood pressure recording was done by sphygmomanometer.

Every case was examined thoroughly before induction of anaesthesia. Pulse rate, B.P., and arterial oxygen saturation by pulse oximeter were recorded and ECG was recorded of each case before induction of anaesthesia.

Premedication:

In the pre-operative room each patient had intraneuresting with 18G I.V. canula. All the patients were premedicated accordingly. Inj. Atropine 0.6 mg was given intramuscular 45 minutes before induction of anaesthesia.

Technique of Anaesthesia - Following techniques were used for anaesthesia.

1. General anaesthesia -

\[ O_2 + N_2O + \text{inhalational agent (Ether).} \]
2. Spinal anaesthesia -

Subarachnoidal analgesia.

General anaesthesia:

In general anaesthesia, pre-oxygenation was done for 5 minutes and patients were induced with a sleep dose of 2.5% Thiopentone sodium followed by 1-2 mg kg⁻¹ body weight suxamethonium. IPPV started and followed by endotracheal intubation. Anaesthesia was maintained as:

\[ \text{O}_2 + \text{N}_2\text{O} + \text{ether}. \]

Subarachnoidal analgesia -

In this technique 2.5 ml to 3.0 ml of 0.5% bupivacaine (Sensorcaine) was injected by puncturing the duramater in L₃-L₄ or L₄-L₅ space by 21G or 22G lumbar puncture needle in right lateral or left lateral position with all aseptic precautions. After the establishment of the block, surgery was allowed.

Measurement/assessment:

The pre, intra and post-operative evaluation was done by the same person. During operation, pulse, blood pressure, arterial oxygen saturation (SaO₂) by the pulse oximeter and electrocardiography was recorded and
the subjective assessment of blood loss during operation recorded.

Post-operative follow-up:

The patients were shifted to post-operative recovery room and monitored. The pulse rate, blood pressure, arterial oxygen saturation were recorded and electrocardiography was done in the immediate post-operative period.

Analysis of data:

The results obtained were compared using the simple statistical methods. The paired 't' test was used to compare the differences between the pre-, intra- and post-operative values in both the groups A & B and P value was taken from the chart of probability.

Statistical calculation:

1. Mean $\bar{X} = \frac{X}{n}$ where $X$ = number of frequencies,
   $n$ = number of patients.

2. Standard deviation (S.D.) = $\sqrt{\frac{(X - \bar{X})^2}{n}}$

where $X$ = number of frequencies,
$\bar{X}$ = mean,
$n$ = number of patients.
3. Degree of freedom (d.f.) = n - 1

4. Standard error of mean = \frac{\text{S.D.}}{\sqrt{n}}

where S.D. = Standard Deviation
n = number of patients.

5. Paired t-test

\[ t = \frac{\bar{d}}{\text{sd} / \sqrt{n}} \]

where \( \bar{d} = \frac{\text{d}}{n} \) (d = difference between X & Y)

n = number of patients.
s.d. = standard deviation of d-series.

6. 'P' value = taken from the chart of probability.

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