MATERIAL AND METHODS
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The present study was conducted on 80 adult patients of either sex, of ASA grade I and II, between the ages of 18 and 60 years, at M.L.B. Medical College Hospital, Jhansi, coming in for various routine surgeries, from July 1983 to April 1984.

Every selected patient was carefully inquired about his ailments and history was recorded. The patient was then thoroughly examined physically. Any patient exhibiting any disease or taking a drug, which alter gastric secretion or motility was excluded from this study. All the information was recorded on a pre-designed proforms. All these cases were kept on 6 hours fasting.

Patients excluded from the study:

1. Patients exhibiting following diseases -
   - Gastric ulcer,
   - Duodenal ulcer,
   - Carcinoma stomach,
   - Reflux oesophagitis,
   - Hiatus Hernia,
   - Diaphragmatic Hernia.
2. Patients taking following drugs -
   - Diazepam and/or other sedatives,
   - Cimetidine,
   - Oral antacids,
   - Anti-cholinergics,
   - Metoclopramide.

All the selected patients were divided into five groups of 16 patients each depending on the drug/drugs given. Every patient was given Diazepam 10 mg orally with 30 ml of water to allay his/her anxiety an hour before induction of anaesthesia.

**Group A (Antacid group)**: All the patients of group A were given Antacid (Digene gel) 30 ml. an hour before induction of anaesthesia.

**Group B (Oral Cimetidine group)**: All the patients of group B were given Cimetidine 300 mg. orally an hour prior to induction of anaesthesia.

**Group C (Intravenous Cimetidine group)**: All the patients of group C were given Cimetidine 300 mg i.v. (Inj. Tagamet) an hour prior to induction of anaesthesia.

**Group D (Anticholinergic group)**: All the patients of group D were given Atropine sulphate 0.65 mg. i.m. an hour prior to induction of anaesthesia.

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*Digene gel - Methylpolysiloxane 25 mg, Mag. hydrox. 125 mg, Alum hydrox. gel to .......... 10 ml, End.Carboxy methyl cellulose 120 mg. per 10 ml.*
**Group E (Oral Cimetidine + Anticholinergic group)**

All the patients of group E were given Cimetidine 300 mg orally + Atropine sulphate 0.65 mg, i.m. an hour before induction of anaesthesia.

**Method of collection of samples**

A wide bore naso-gastric tube was passed as smoothly as possible without disturbing the patient, and its presence was confirmed by auscultation over epigastrium, and stomach made empty every time, samples were withdrawn. Gastric samples were taken as follows -

I sample - Just before giving any drug.

II sample - One hour after giving drug just before induction of anaesthesia. pH of both the collected samples were determined by expanded scale pH meter and readings were recorded.

**Technique of pH determination**

Gastric fluid pH was determined by Elico expanded scale pH meter model L1-15. It is a versatile laboratory precision pH meter that permits to read pH directly to an accuracy of ± 0.02 pH.

**Controls and their functions**

1. On/off switch: This is a rocker type of switch to switch mains to the instrument. In off position, it shorts the meter to protect it when meter is not in use.
2. Meter: This is 100-0-100 microammeter calibrated 0 to 14 pH (+700 mv to -700 mv) on top scale and -1 pH to +1 pH (-100 mv to +100 mv) on bottom scale.

3. Standardise: This is an asymmetry control to make the pH meter read a standard buffer value on meter.

4. Temp. compensate: This is a manual temperature compensation arrangement to correct for the temperature characteristics of the electrodes.

5. Selector: This is a band switch to select any of the Fine functions of instrument. In Std. By position, the amplifier input is shorted and meter should read 7 pH. In normal pH position, it works like an ordinary pH meter to read from 0 to 14 pH with an accuracy of ± 0.1 pH. In normal mv position, ± 700 milli volts can be measured. In expanded pH position, pH scale can be expanded by ± 100 mv.

6. Stand: This is a support to the instrument with a facility to swivel the instrument to set it at a convenient angle for reading.

7. Stand Base and Rod: This is a plated aluminium piece to be screwed to the stand for supporting a rod called electrode stand and supports electrodes with a clip.
Fig. No. 1 - Showing Expanded Scale pH Meter,
8. Electrode Rod: Supports the electrodes.

9. Electrode clip: This clip holds both glass and reference electrodes and can be fixed in any convenient height.

10. Reference Electrodes: This is an electrode that serves as reference in ionic flow. The sleeve should always be removed during measurement so that the filling hole is open to atmosphere.


12. GE socket: This is a socket to accept the glass electrode jack. The screw must be tightened after the jack is inserted into it fully.

13. Fuse: A fuse of 0.5 A to protect the instrument from short circuit.

14. RE socket: This is a banana terminal to which reference electrode pin is connected.

15. Cable: 3 core power cable to connect 230 V 50 Hz mains to the instrument.

16. Mv cal: Preset to calibrate instrument in mV position.

17. pH Cal.: Preset to calibrate instrument in pH position.
OPERATING PROCEDURE

Normal pH measurement: - If pH of any solution is needed to be measured upto the accuracy of ± 0.02 pH, it is essential to use an expansion scale. But the value of pH to the accuracy of first decimal should be found out first. For this Normal pH measurement is to be done. Gastric fluid pH was measured in normal mode of measurement with an accuracy of ± 0.1 pH.

Procedure adopted was as follows:

1. Glass and reference electrodes were fixed to the clip and inserted on to the electrode rod which was fitted to the electrode stand base.

2. The electrode stand base was fixed on to the leg of stand of pH meter.

3. Glass and reference electrode jacks were connected to respective sockets.

4. The electrodes were cleaned with distilled water and wiped with filter paper.

5. The electrodes were dipped in 4.00 pH Buffer and temp. comp. adjusted to the temperature of Buffer.

6. The instrument was switched ON and the selector was switched to Normal pH position.

7. Standardise control was adjusted to make the meter read 4.00 pH.
8. It was checked for the repeatability. The selector was switched to Std. By position.

9. The electrodes were removed and cleaned in distilled water and wiped with filter paper.

10. The electrodes were dipped in an unknown solution whose pH was of interest and the temp. comp. was read, if the temperature of solution was different.

11. The selector was switched to Normal pH position to read the value of pH. Steps 8 and 9 were repeated.