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Preoperative and Postoperative PEFR Values for Patients Undergoing Upper Abdominal Surgeries Under General Anaesthesia in Saveetha Medical College and Hospital, Tamilnadu.

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Abstract:-

BACKGROUND: Upper abdominal surgeries under general anaesthesia causes decrease in PEFR (Peak expiratory flow rate) values as lung compliance will be reduced because of general anaesthesia and upper abdominal surgery will limit the lung movements because of pain.

Objective of this study is to find the effect of general anaesthesia in patients undergone upper abdominal surgery in Saveetha Medical College and hospital, Tamilnadu.

METHODOLOGY:After research ethics board approval, 45 patients scheduled for upper abdominal surgeries under general anaesthesia are measured for PEFR values preoperative and postoperatively using wright peak flow meter.

RESULT:In the 45 patients studied, PEFR values are reduced for all postoperatively.

CONCLUSION:Patients who has undergone upper abdominal surgeries under general anaesthesia will have reduced PEFR values because general anaesthesia will decrease respiratory muscle tone, decreased lung volume accompanied by reduced lung compliance and upper abdominal surgery will limit the lung movements because of pain.

Keywords:- *Upper Abdominal Surgery, General Anaesthesia, Peak Expiratory Flow Rate, Lung Compliance.*

I. INTRODUCTION

Upper abdominal surgeries under general anaesthesia will have postoperative effects on respiration [1]. These respiratory changes occur because of both general anaesthesia and surgery. Surgery will limit the movements of lungs because of operative procedure and general anaesthesia will reduce the tone of respiratory muscles and reduces the lung volume, that results in increasing resistance and reducing compliance of lung [2].

Peak expiratory flow rate (PEFR) values can reflect large airway flow and depends on voluntary efforts, strength of the respiratory muscles of the patient. So PEFR values of the patients preoperative and postoperatively will reflect the effect of upper abdominal surgeries and general anaesthesia on lungs and respiration [3].

II. METHODOLOGY

After research ethics board approval, this study was conducted in Saveetha Medical College and Hospital, Thandalam, Kancheepuraam, Tamilnadu,on patients who are scheduled for upper abdominal surgeries under general anaesthesia.

The study type is prospective study with sample size of 45 patients with consent and sampling method used was simple random sampling in one month.

PEFR values are measured using the device mini-wright peak flow meter, the procedure to measure PEFR is as follows

1. Insert the mouth piece into the meter and ensure the pointer is set at zero (L/Min).
2. Ask the patient to hold the device without obstructing the holes.
3. In sitting position ask the patient to take a deep breath and then blow as fast and hard the patient can
4. Note the value
5. Return the pointer to zero (L/Min) and repeat the procedure twice. So totally 3 readings are obtained
6. The highest of the reading is the PEFR value of the patient.

In this way PEFR values of all 45 patients are noted before surgery, and postoperatively after 2 hour, 6 hours and 1 day

III. RESULT

PEFR values are taken for 45 patients, and averages are made for all preoperative and postoperative after 1 hour, 6 hours and 1 day as mentioned in table and bargraph.

The results reflect the effect of both upper abdominal surgery and general anasthesia on respiration and respiratory muscles

Time	Average PEFR values in Litre/Minute
1 hour before surgery	570
2 hours after surgery	320
6 hours after surgery	390
1 day after surgery	450

IV. CONCLUSION

The PEFR values reflect the effect of upper abdominal surgery under general anaesthesia on respiration. Even though the average PEFR values are taken, in every patient it followed the same pattern because the postoperative pain and effect of general anaesthesia. As the effect of general anaesthesia and postoperative pain will be high immediately after surgery [4] the lowest PEFR values are recorded postoperatively after 2 hours and eventually increases by 6 hours and one day, but did not restore the valuesobtained preoperatively.

Postoperative pain will limit the inspiratory movements and blowing out air [5] , general anaesthesia will decrease the tone of respiratory muscles, lung volume, compliance and increase resistance[6].

So we conclude that normal potential of lungs are reduced in patients undergone upper abdominal surgeries under general anaesthesia because of postoperative pain and effects of general anaesthesia on lungs .

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