DRUG UTILISATION EVALUATION IN DEPARTMENT OF ANAESTHESIA

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ABSTRACT:

Background: Anaesthesia means loss of sense which induces sleep during a surgical procedure. The drugs which are used for inducing anaesthesia are called as anaesthetics.

Objective: To assess the use of various anaesthetics by different anaesthesiologists within Rajahmundry region.

Materials and methods: The study was a Simple Prospective Observational study which was carried out for a period of six months. A total of 140 cases were collected in which anaesthetics were administered for surgical procedures. In this study, the type of anaesthetics mostly administered to patients whether single or in combination was evaluated. The gender, age of the patient, type of anaesthetic and type of surgery performed were reported. The results were analyzed and evaluated.

Results: A total of 236 anaesthetic cases were collected. Of these, 76 (32.2%) were of General anaesthesia, 96(40.6%) were Regional anesthesia(Spinal) and 64 (27.1%) were of Local anaesthesia. Among the 236 cases, males were 88 (37.2%) and females were 148(62.7%) underwent surgery which involved anesthetic usage. Among General anaesthetics, Propofol (P), Nitrous Oxide (N), Isoflurane (I), Midazolam (M), Atracurium besylate (A) Vecuronium (V) Fentanyl (F) were used in combination. PNIM was used in 23 (30.2%) cases. PNIAs 16 (21.0%) of cases, PNIMV 37 (48.6%). Among Local Anaesthetics, Bupivacaine (B), Lignocaine (L), Xylocaine (X) were used in combination or single. BL 9 (7.2%) cases, Bupivacaine 131 (55.5%), Lignocaine 7 (5.6%) and Xylocaine 13 (10.4%). In case of spinal anesthesia, Bupivacaine is the most commonly used drug.Based on surgery, the most commonly performed surgery was C-section 74(31.3%) , Hernia 56 (23.7%) followed by Cholicystectomy 37 (15.6%) and least performed surgery is Heller's Myotomy 5(2.1%) . Adverse outcomes observed were hypotension (11.4%), bradycardia (6.77%), Sweating(8.05%),hypertension (2.11%) and post operative nausea and vomiting (PONV) (1.2%)

Conclusion: : Bupivicaine was most commonly prescribed for spinal. Propofol is most commonly prescribed drug for induction of anaesthesia followed by as maintenance of anaesthesia. Evaluation of utilization of anaesthetics and implementation of effective strategies can greatly aid in improving the quality use of anaesthetics.

Introduction:

Drug utilization review is an ongoing, systematic process designed to maintain the appropriate and effective use of medications. Drug utilization review play a key role in helping managed health care systems to understand, interpret and improve the prescribing, administration and use of medications. It involves a comprehensive review of a patient's medication and health history before, during, and after dispensing in order to attempt to achieve appropriate therapeutic decision making and positive patient outcomes.(1) Drug utilization review ensures

whether the drugs are used appropriately, safely and effectively to improve patient health status.(2)

American Society of Anesthesiologists classified anesthesia into three main categories, each having many forms and uses.(3)

General Anesthesia, are CNS depressants that are used to bring about a reversible loss of pain sensation and consciousness. Their use permits painful surgical procedures to be performed without the patient being aware of it, or even reacting reflexes. There are number of general anesthetic drugs - some are gases or vapors inhaled through a breathing mask or tube and others include medications introduced through a vein.(3)

Regional Anesthesia- Administration of an injection near to a cluster of nerves to numb the area of body that requires surgery. Receiver remain awake or may be given a sedative, either of the way making no feel of actual surgery taking place. There are several kinds of regional anesthesia; the two most common are spinal anesthesia and epidural anesthesia.

Local Anesthesia- Drug is usually injected into the tissue to numb just the specific location of the body requiring minor surgery. Local anesthetics are drugs that cause a loss of sensation in a limited area of the body. Unlike general anesthetics, these drugs do not cause unconsciousness. Local anesthetics may be defined as drugs which reversibly block nerve conduction beyond the point of application, when applied locally in an appropriate concentration.

ASA Physical Status Classification:(4)

ASA 1: A normal healthy patient.

ASA 2: A patient with a mild systemic disease.

ASA 3: A patient with a severe systemic disease that is not life-threatening.

ASA 4: A patient with a severe systemic disease that is a constant threat to life

ASA 5: A moribund patient who is not expected to survive without the operation.

ASA 6: A brain-dead patient whose organs are being removed with the intention of transplanting them into another patient.

MATERIALS AND METHODS

A three month prospective observational study was carried out in Surgery department of affiliated tertiary care hospitals which are associated with College in Rajahmundry city. A total of 300 cases were collected in which anesthesia usage was determined.

INCLUSION CRITERIA:

- Patients of age 18-60.
- Patients of weight 30-80kgs
- Duration of surgery: 45mins-75mins
- Patients who were willing to participate in the study.
- ASA 1 &2.

EXCLUSION CRITERIA:

- Hypersensitive patients
- Patients with severe cardiac and respiratory problems.

Analysis of data: The data will be analysed using statistical software SPSS.

RESULTS: The study entailed 236 subjects, undergoing surgeries with suitable anaesthetic administration consisting of 88 (37.2%) males and 148 (62.7%) females. Maximum surgeries

are carried out in adults of age group 13-45 (71.6%) followed by of age group 45-60 (27.9%) and minimum in paediatrics of age group 1-12 (0.4%) at the study sites.

Among all the surgeries carried out 208 (88.1%) were planned prior and 28 (11.8%) surgeries were carried out in emergency conditions. Studying the American society of anesthesiologists (ASA) grading, our study includes 152 (64.4%) grade I, 84 (35.5%) of grade II.

Surgeries carried under various departments were noted of which Urology (16), Gynaecology (99) and Gastroenterology (121)

Table 1: Frequency of anesthesia types:

TYPE OF ANESTHESIA	NO OF PATIENTS	PERCENTAGE (%)
General Anesthesia	121	51.2%
Regional Anesthesia- Spinal	87	36.8%
Local Anesthesia - Blocks	28	11.86%

Figure 1:

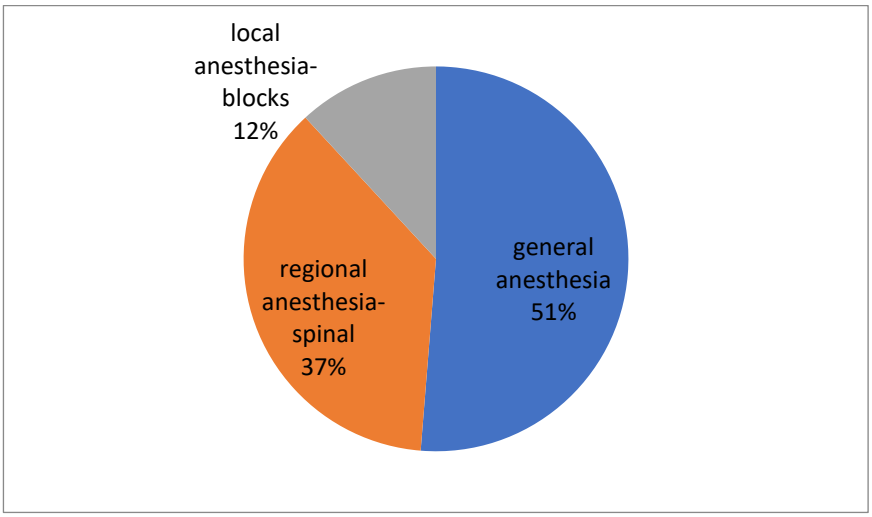


Table 2: Procedures incorporated in the study:

PROCEDURE	**FREQUENCY(n)**	**PERCENTAGE(%)**
C-section	74	31.3%
Hernia	56	23.7%
Cholicystectomy	37	15.6%
Ovarian cystectomy	25	10.59%
Vault prolapse	16	6.77%
Appendicitis	12	5.08%
Fistulectomy	11	4.66%
Heller's myotomy	5	2.11%

FIGURE 2:

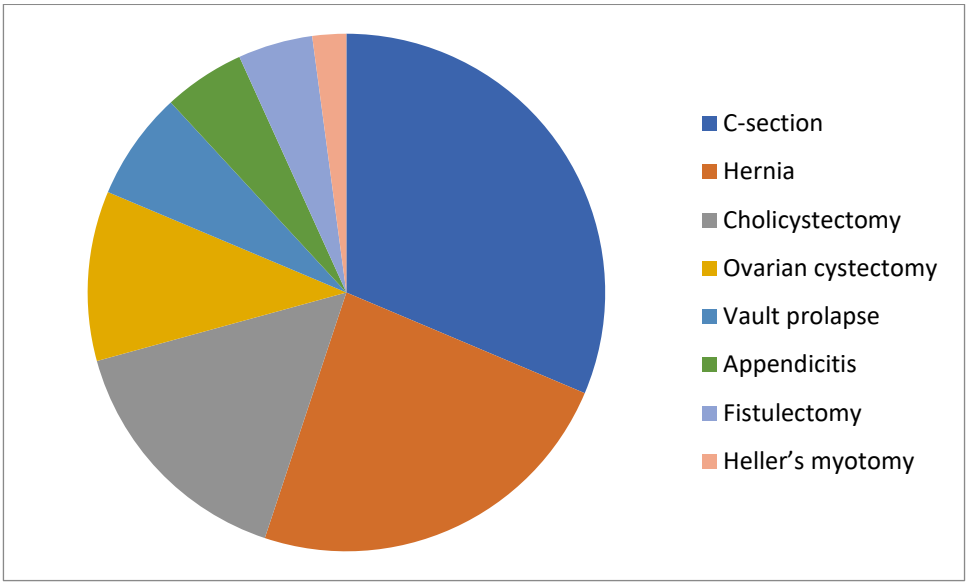
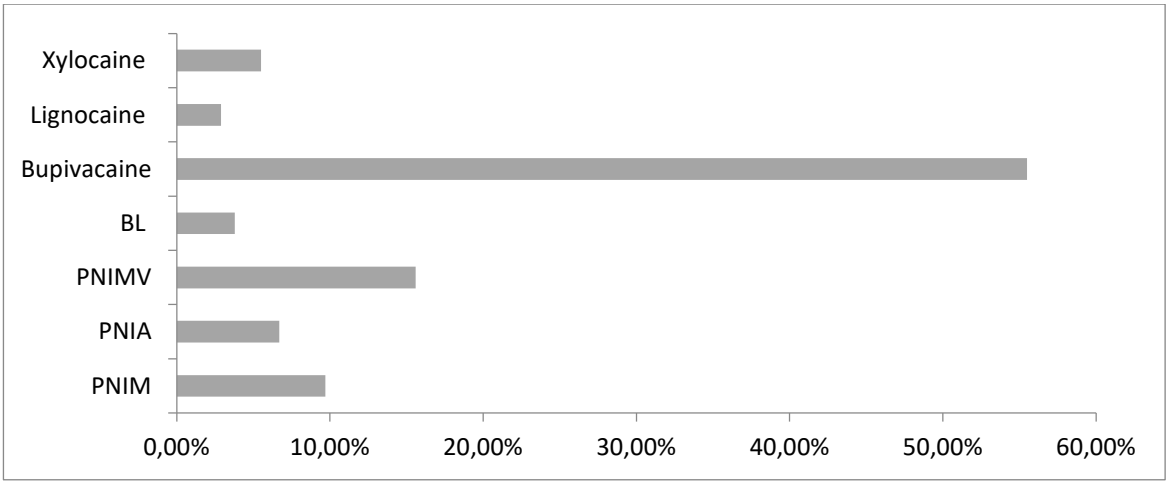


Table 3: Anesthetic drugs wise distribution:

S.NO	Anaesthetic drugs	No.Of Patients	Percentage (%)
1	PNIM	23	9.7%
2	PNIA	16	6.7%
3	PNIMV	37	15.6%
4	BL	9	3.8%
5	Bupivacaine	131	55.5%
6	Lignocaine	7	2.9%
7	Xylocaine	13	5.5%

FIGURE 3:



DISCUSSION: Drug Utilization Review (DUR) is a system of ongoing, systematic, criteria-based evaluation of drug use that ensures that drugs are used appropriately (at the individual patient level). If therapy is deemed to be inappropriate, interventions with providers or patients will be necessary to optimize drug therapy. A DUE is drug or disease specific and can be structured so assessing the actual process of prescribing, dispensing or administering a drug (indications, dose, drug interactions, etc.) is possible. The concept of prudent drug utilization review facilitates in improved drug use and its application including rational decisions in accordance with condition of patients.

In the present study, use of various agents for anaesthesia under few anaesthesiologists was observed. The drugs predominantly employed for General, Regional and local anaesthesia was noted.

According to our study the type of anaesthesia mostly employed was Local anaesthesia, of which most followed technique was general anaesthesia was employed among (51.2%), spinal (36.8%) and blocks of (11.86%) and of subjects.

CONCLUSION: It was evident from the observation that the choices of anaesthesia as well as outcome of procedures were rational and satisfactory from practical understanding. The theoretical understanding therefore holds well in practice of general, regional and local anaesthesia at our particular anaesthetist units of Rajahmundry.

Our study concluded that spinal anaesthesia was mostly adopted by anaesthesiologists and Bupivacaine was most common anaesthetics drug of choice. Propofol is most commonly prescribed drug for induction and also as maintenance anaesthesia in few surgeries.

References:

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