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ANALYZING AND EVALUATING THE USE OF ANAESTHETICS IN A TERTIARY CARE HOSPITAL IN CHITTOOR, ANDHRA PRADESH.

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ABSTRACT

Introduction: The pattern of prescribing, dispensing, administering, and ingestion of drug or drugs is defined as Drug utilization pattern. Thus, from the definition it is seen that several factors and steps are involved in drug utilization pattern analysis. Probes in drug use can arise in each of these steps. Some of the factors that contribute to problems are social, organizational, economic, physiologic, historical, or pharmacologic origins. By including outcome variables, the World Health Organization (WHO) expands the definition of drug use. Materials and Methods: Current study is aimed with analyzing and evaluating the use of anesthetics in a tertiary health care hospital by RVS Multi-specialty Hospitals located in Chittoor district, Andhra Pradesh, India. The study was carried out in all the departments of the hospital, but, especially focused on the use of anesthetics and their flow in the hospital. As it is easy to evaluate the flow and use of dug in a hospital by analyzing the cases and studying the case reports of individual patients, the present study is designed as a retrospective study. Results and Discussion: The present retrospective study has involved 135 patients who have attended the RVS multi-specialty hospitals, Chittoor District, Andhra Pradesh, India, in the past 6 months and administered with anesthetic/anesthetics. All the data required for the present study are collected for the individual case reports. From the data collected it was observed that anesthetics have been used in cases of hemiolasty, fissurectomy, tonsillectomy, apendicectomy, haemorrhoidectomy and some other clinical conditions. Among 135 number of patients, 29 have undergone tonsillectomy, 25 were undergone with apendicectomy, 20 for hemioplasty, 11 for haemorrhoidectomy, 19 undergone fissurectomy and the others included 31 cases. Among all the cases, tonsillectomy was done in more number, with a highest percentage of 21.4%. Conclusion: From the retrospective study conducted in RVS Multi-specialty Hospital, Chittoor District, Andhra Pradesh, India, in about 135 patients the pattern of drug use in particular anesthetic drug use has been analysed. The use of combination of anesthetics was found to be in 85 patients among 135 patients and merely more than single anesthetic use with a percentage of 62.96%. BMXA is the local anesthetic used in the hospital in which the study is carried out and Bupivacaine is monoanesthetic, PNIM is general anesthesia used.

Keywords :- PNIM, BMXA, MRD, Apendicectomy, Anesthetics, polyanesthesia.

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INTRODUCTION

The pattern of prescribing, dispensing, administering, and ingestion of drug or drugs is defined as Drug utilization pattern[1]. Thus, from the definition it is seen that several factors and steps are involved in drug utilization pattern analysis. Probes in drug use can arise in each of these steps. Some of the factors that contribute to

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problems are social, organizational, economic, physiologic, historical, or pharmacologic origins. By including outcome variables, the World Health Organization (WHO) expands the definition of drug use[11]. "The marketing, distribution, prescription, and use of drugs in society, with special emphasis on the resulting medical, social, and economic consequences", is the definition given by WHO [12]. Annual review by FDA on national outpatient drug use is the major source of information in U.S for pattern of drug use with respect to age, gender and clinical condition of the patients. It is also useful in comparative studies for different class of drugs in different geographic regions[2].

Loss of all modalities like pain, sensation at a particular region or whole body which is mainly reversible and loss of consciousness in main terms is called as anesthesia[3]. A state in which there is a collection of components resulting n changes in behavior or perception s known as aesthetic state. Unconsciousness, analgesia, amnesia, attenuation and immobility in response to noxious stimulation are the various components of anesthetic state [4]. Coming to general anesthetics, they are a group of drugs that produce reversible components like amnesia, immobility, muscle relaxation, abolitions of autonomic and somatic reflexes, sleep, loss of sensation as their cardinal features[5]. General anesthetics usually increase the threshold of central nervous system neuron firings, but the actual mechanism of action of general anesthetics is not clearly understood yet [6]. Lipid solubility is shown at high extent as positive correlation with respect to inhaled anesthetics [7].In recent years the role of clinical pharmacist includes ensuring the rational drug use, safety measure and efficacy of the therapy by monitoring keenly. This is brought by direct interaction of clinical pharmacist with both the patient and the doctor and by maintaining a healthy relationship between them [8]. On this aspect and effort, the method or system of Drug Utilization Evaluation (DUE) has come into force as a key role of clinical pharmacist [9]. In health care system evaluation, the DUE has become a potential tool in the recent years, which was started in early 1960s. Interests in it has been recently due to increased new drug marketing [10].

MATERIALS AND METHODS:

Current study is aimed with analyzing and evaluating the use of anesthetics in a tertiary health care hospital by name RVS Multi-specialty Hospitals located in Chittoor district, Andhra Pradesh, India. The study was carried out in all the departments of the hospital, but, especially focused on the use of anesthetics and their flow in the hospital. As it is easy to evaluate the flow and use of dug in a hospital by analyzing the cases and studying the case reports of individual patients, the present study is designed as a retrospective study. For this the materials required are collected form the Medical Records Department (MRD) of the hospital. All the case reports irrespective of age, gender and number of days stayed in the hospital were collected for the past 6 months of patient admissions. The study was finely designed and carried out for a period of three months. Any queries in the documentation of case reports are cleared by the health care professionals at appropriate time. Once all the data has been collected, the raw data is incorporated into a computerized data analysis software and the rate and flow percentages were analysed.

RESULTS AND DISCUSSION:

The present retrospective study has involved 135 patients who have attended the RVS multi-specialty hospitals, Chittoor District, Andhra Pradesh, India, in the past 6 months and administered with anesthetic/anesthetics. All the data required for the present study are collected for the individual case reports.

From the data collected it was observed that anesthetics have been used in cases of hemiolasty, fissurectomy, tonsillectomy, apendicectomy, haemorrhoidectomy and some other clinical conditions. Among 135 number of patients, 29 have undergone tonsillectomy, 25 were undergone with apendicectomy, 20 for hemioplasty, 11 for haemorrhoidectomy, 19 undergone fissurectomy and the others included 31 cases. Among all the cases, tonsillectomy was done in more number, with a highest percentage of 21.4%, represented in TABLE 1.

Based on the treatment procedure to be operated in the patient and based on the clinical condition, the type of anesthesia used in the patients were of two types which included, local anesthesia, which is used for immobilization or making loss of sensation at a particular part of the body or for relieving pain for a particular period of time, which acts by inhibiting the pain receptor transmission at the particular region via neurons. And the other type of anesthesia included is general anesthesia which is also known as generalized anesthesia, which is usually given for making the patient unconscious or immobilized for a particular period of time, in this the whole body gets anesthetized and reversible after a particular period of time. In the present study, more number of patients were undergone with local anesthesia with a number of 98 patients accounting for about 72.59%. which is represented in the TABLE 2.

The total number patients were also noted for type of administration of anesthesia undergone which included single anesthetic usage, and combinational anesthetic usage. It was observed in the study that the combinational use of anesthesia is more in patients when compared to single anesthetic use. The percentage of use of single anesthetic was about 37.03%.which is represented in the TABLE 3.

The study of drug use pattern mainly refers to the prevalence or frequency of drug use in patients in patient

with respect to age, gender, clinical condition and economic functioning of the hospital. It was noted from the study that Lidocaine is the anesthetic used with low frequency with its history of use in one patient among 135 patients, and Bupivacaine is the anesthetic used more frequently in the hospital were the study was conducted with a percentage of about 40.74% use in the whole study. population. Use of xylocaine was in about 15 patients with a percentage of about 11.11%, use of PNIM was about 17.03%, i.e., in 23 patients, BMXA was used in 11 patients with a percentage of 8.14%, and PNIS use was in 30 patients with a percentage of about 22.22%.

Table 1: Type of Clinical Conditions Involved With Use of Anesthetics in Respect to Number Of Patients

Sl.no.	Surgery	No. Of cases	Percentage
1.	Tonsillectomy	29	21.4%
2.	Apendicectomy	25	18.5%
3.	Hernioplasty	20	14.8%
4.	Haemorrhoidectomy	11	8.14%
5.	Fissurectomy	19	14.07%
6.	Others	31	22.96%
	Total	135	100%

Table 2: Type of Anesthesia With Respect to Number of Cases

Sl.no	Type of anesthesia	No. of cases	Percentage
1.	Local Anesthesia (LA)	98	72.59%
2.	Generalized Anesthesia(GA)	37	27.41%

Table 3: Type of Administration of Anesthesia With Respect to Umber of Patients.

Sl.no	Type of administration	No. of cases	Percentage
1.	Single anesthetic usage	50	37.03%
2.	Combination anesthetic usage	85	62.96%
	Total	135	100%

Table 4: Type of Anesthetic Given to the Patient

Sl.no	Anesthetic	No. of cases	Percentage
1.	Lidocaine	1	0.74%
2.	BMXA	11	8.14%
3.	PNIS	30	22.22%
4.	Bupivacaine	55	40.74%
5.	PNIM	23	17.03%
6.	Xylocaine	15	11.11%

CONCLUSION

From the retrospective study conducted in RVS Multi-specialty Hospital, Chittoor District, Andhra Pradesh, India, in about 135 patients the pattern of drug use in particular anesthetic drug use has been analysed. The use of combination of anesthetics was found to be in 85 patients among 135 patients and merely more than single anesthetic use with a percentage of 62.96%.BMXA is the local anesthetic used in the hospital in which the study is carried out and Bupivacaine is monoanesthetic, PNIM is general anesthesia used. Among all types of anesthetics, Bupivacaine is of high preference in the study hospital, with a highest percentage of 40.74% in 55 patients of study population. Generalized anesthesia is less frequently when compared to local anesthesia, general anesthesia was given in 37 patients, and local anesthesia was administered in 98 patients. Tonsillectomy was the highly operated surgery among 135 cases with a percentage of 29.4% which included anesthetic use.

ABBREVIATION:

GA: General Anesthetics
LA: Local Anesthetics
WHO: World health Organization
DUE: Drug Utilization Evaluation
PNIM: Propofol (P), Nitrous oxide (N), Isoflurane (I), Midazolam (M)
PNIS: Propofol(P), Nitrous Oxide (N), Isoflurane (I), Suxamethonium Chloride (S)
BMXA: Bupivacaine (B),Midazolam (M), Xylocaine (X) with Adrenaline(A)

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