

A Study of Drug Utilisation Pattern in the Paediatric Outpatient Department of the Dental College and Hospital, JNIMS, Manipur.

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ABSTRACT

Background: The study of prescription pattern in medical practice is a good tool for the prescriber, administrator and also for the MNCs. This study may influence the process of pharmacoepidemiology, pharmacovigilance and pharmacoconomics and may also be under the category of medical audit for the prescriber. Therefore the study is focussed on the drug utilisation for the common dental problem encountered in the paediatric OPD under RBSK program of NRHM. **Methods:** This study is the retrospective observational examination of the OPD prescription for the period of three months. The demographic data of the patients along with the diagnostic based drug prescription is collected. The data is analyzed on the basis of descriptive statistics. **Results:** 368 Prescription is examined but only 354 is eligible for the study as the 14 incomplete prescription is excluded. The age wise and sex wise data is analysed- 190 female (53.67%) 164 male (46.32%) age wise commonest (5-7 years) 136 (38.41%). The Common problem which is encountered by the Dental surgeon is Chronic irreversible pulpitis 153 (43.2%), Periapical abscess 140 (39.5%), Dentoalveolar abscess 47 (13.27 %) exfoliation/Pre shedding mobility 14 (3.9%). The dental surgeon prescribed Tab Amoxicillin (one prescription), Tab Amoxicillin plus Clavulanic acid (133 prescription), Tab Paracetamol (180 prescription), Tab Paracetamol plus Aceclofenac (40 prescription). Prescription containing Syr Metronidazole is also prescribed by the Dental Surgeon for the abscess cases. The prescription of the drug is on Brand and Proprietary name. Most of the drugs is under the NLED. **Conclusion:** Paracetamol and Amoxicillin are the main drug for the paediatric dental care. The regular mass awareness program on rational use of drug is suggested to the concerned authority for improving the prescription pattern among the Dental Surgeon.

Keywords: Dental Surgeon, Drugs, Paediatric, Prescription, RBSK.

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INTRODUCTION

The doctors who use the drugs judiciously and rationally are regarded as good and responsible physicians. Because the doctors provide a cost effective treatment to the patient and also prevent from the development of resistance/tolerance and the ADRs/ADEs. Further the doctors help the administrators, policy makers and the MNCs (Multinational Company) to bring down the extra expenditure in connection with injudicious, indiscriminate procurement of drugs and the compensation for injuries due to drugs. Therefore the interest in drug utilisation study has been increasing for marketing purpose, quality of medical prescription and comparing the patterns of use of specific drugs and also investigational pharmacoepidemiology, pharmacovigilance, pharmaco-economic and pharmacogenetic.^[1] According to WHO drug utilisation study is considered as the marketing, distribution, prescription and use of drugs in a society considering

its consequences either medical, social and economic.^[2] Additionally a process called the medical audit for monitoring and evaluate the prescribing pattern and suggesting the necessary modification in prescribing practice in relevance to identify common problem in the medical practice is going on nowadays.^[3] Drug utilisation pattern is a powerful tool to ascertain the role of drug in dental practice. The present study is focussed on drug utilisation for the common dental problems (caries, gingivitis, tooth extraction) which are encountered in the paediatric OPD under the RBSK (Rashtriya Bal Swasthya Karyakram) program of the NRHM (National Rural Health Mission).

MATERIALS & METHODS

The study is a retrospective observational examination of the OPD prescription. The Medical Superintendent JNIMS has consented to assess the OPD prescriptions under the RBSK of NRHM for three months (ie Oct- Dec 2019).The total number of OPD prescription is 368. The demographic data (age, sex, diagnosis) along with the drug prescription (name of drug, brand, dose, dosage form, frequency, route of administration and durations) and NLED (National List of Essential Drugs) is assessed and

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recorded. The prescription which doesn't mention any drug, dosage form, route, frequency are excluded. Analysis of the collected data is done by using descriptive statistics through Microsoft Excel Software 2007.

RESULTS

The number of OPD prescriptions for the period ie Oct- Dec 2019 is 368. Out of which 14 incomplete prescriptions were excluded. The patient demographic showed that out of 354 prescription in this study- number of male is 164 (46.32%); female is 190 (53.67%). Maximum number of patients (136;38.41%) is within the age group 5-7 years (school going children) and least number of patient (47; 13.27%) is in the age group 13-18 years (upper teenage) [Table 1].

Table 1: Demographic characteristics of patients

Variables	N= 354	Percentage %
Gender		
Male	164	46.32
Female	190	53.67
Age (years)		
2-4	65	18.36
5-7	136	38.41
8-12	106	30.22
13-18	47	13.27

The commonest dental problem which is encountered in this study is chronic irreversible pulpitis (153; 43.2%). Further the following dental problem are Periapical abscess (140;39.5%), Dentoalveolar abscess (47;13.27%) and Exfoliation/ Preshedding mobility(14;3.9%) [Table 2 & Figure 1]

Table 2: Disease pattern and No of patients

Disease/procedure	N= 354	Percentage %
Chronic irreversible pulpitis	153	43.2
Periapical abscess	140	39.5
Dentoalveolar abscess	47	13.27
Exfoliation/pre shedding mobility	14	3.9

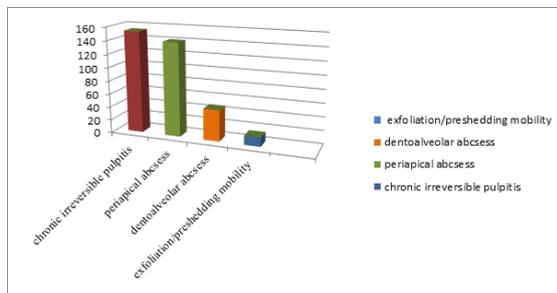


Figure 1: Disease pattern and number of patients

All the drugs are prescribed as proprietary drug (353;99.7%) except one as generic (1;0.28%). The route, frequency, duration of the drug are orally twice a day for 5 days. The Number of follow up patient is only 2(0.56%). [Table 3]

Table 3: Representation of drug information

Name		Percentage %
Brand	353 (N)	99.7
Generic	1(N)	0.28
Dose/frequency	BD	100%
Route	Oral	100%
Duration	5 days	100%
Instruction to pts/follow up	2 (N)	0.56%

It is observed that 243 prescription is with analgesic and 102 prescription is with antibiotic. 330 prescription is with Analgesic plus antibiotic. 3 prescription is with Analgesic plus Antiseptic. 2 prescription is with Antibiotic plus Antiseptic. 16 prescription is with Analgesic plus Vitamin. 10 prescription is with Vitamin plus antibiotic. 4 prescription is with Vitamin plus Antiseptic [Table 4]

Table 4: Number of prescription

Number of prescription	N	Percentage %
Prescription with analgesic only	243	68.64%
Prescription with antibiotic only	102	28.81%
Prescription with antiseptic only	5	1.4%
Prescription (analgesic+antibiotic)	330	93.2%
Prescription (analgesic+antiseptic)	3	0.8%
Prescription (antibiotic+antiseptic)	2	0.5%
Prescription (vitamin+analgesic)	16	4.5%
Prescription (vitamin+antibiotic)	10	2.8%
Prescription (Vitamin + antiseptic)	4	1.1%

The major group of drug which are administered by the dental surgeon are analgesics (243; 68.64%) antibiotic (192; 54.23%) antiseptic /mouthwash (21, 5.9%) and vitamin etc (26;7.3%) [Table 5 & Figure 2]

Table 5: Major pharmacotherapeutic group

Group	No of prescription	Percentage %
Analgesics	243	68.64
Antibiotics	192	54.23
Antiseptics	21	5.9
Vitamin	26	7.31

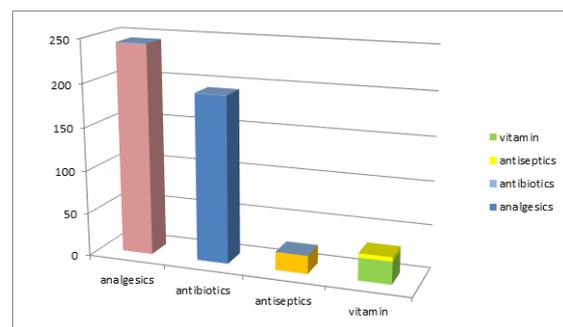


Figure 2: Major Pharmacotherapeutic group

The specific commonly prescribed drugs for the above mentioned dental problem are 1(one) prescription of Tab Amox (250 mg BD oral for 5 days) 133 prescriptions of Tab Amox plus clavulanic acid (375 mg BD oral for 5 days). 1 prescription of Tab Taxim 100 mg BD oral for 5 days, 17 prescription of Syr. metronidazole 200 mg BD oral

for 5days; 21 prescription of 0.2 % chlorhexidine oral mouth wash for 2 weeks and 26 prescription of Syr vitamin 200 ml BD oral for 30 days . Similarly the common analgesic is NSAID; 180 prescription, of Tab paracetamol 250 mg BD oral for 5 days , 40 prescription of Tab Paracetamol plus aceclofenac 325 mg BD oral for 5 days. [Table 6]

Table 6: Commonly used drug with name, dosage, frequency and duration

Drug	No of drug prescribed	Dose	frequency	Duration
Tab Amoxicillin	1	250	BD	5 days
Tab Amox+ clavulanic	133	375	BD	5 days
Tab Taxim	1	100	BD	5 days
Syr Metronidazole	17	200	BD	5 days
Chlorhexidine	21	0.2 %	BD	2 weeks
Syr Multivitamin	26	200 ml	BD	30 days
NSAID				
Tab Paracetamol	180	250	BD	5 days
Tab Aceclofenac+paracetamol	40	325	BD	5 days

DISCUSSION

The retrospective examination of the prescriptions on the OPD tickets of the Dental college & Hospital JNIMS under the RBSK program of NRHM is done in respect of the rational use of drug /medicine and also the NLED.^[1] The total number of prescription is categorised as sex wise and age wise. The diagnosis and problem of the patients are also properly studied. The maximum number of patient attended in the OPD of the Dental Hospital is female 190 (53.67%) and also in the age group of 5-7 years (school going) is 136 (38.41%). This type of observation is almost opposite to that of Salman et al.^[4] and Nirav N Patel et al.^[5] as their studies was with all range of ages. The most common dental problem encountered by the dental surgeon is the Chronic irreversible pulpitis (153; 43.2%). This observation is almost familiar to the findings of Nirav N Patel et al.^[5] and Pandey et al.^[6] Most of the dental surgeon preferred to write the prescription of the drugs on brand/proprietary name (353;99.7%). Only one prescription is on generic name (0.28%). This observation is more or less similar to the findings of Daisy Wadhwa et al.^[7] Regarding the follow up patient, only 2 patient turn up to the OPD for further advice. It seems that the patient are not properly counselled for further treatment, The same was observed by Daisy Wadhwa et al.^[7] The major group of the drug which is observed on the present prescription are analgesics (243;68.64%), antibiotics (192;54.23%), antiseptic/mouth wash (21;5.9%) and vitamin (26;7.31%). Such type of finding was also published by Paudel KR et al.^[8]

As reported by Rafael et al.^[9] the antibiotic which is commonly used in dental practice such as Erythromycin, Metronidazole, Azithromycin were found to be ineffective in application to over 30% as there is no microbial testing for finding out the causative organism. It is observed that the antibiotic which is written by the dental surgeon is Tab Amoxicillin one prescription 250 mg BD oral for 5

days and Tab Amoxicillin plus Clavulanic acid in all the prescriptions. It seems that such choice of antibiotic may be with clinical experience or empirical therapy or thinking that amoxicillin belongs to beta lactam antibiotic having extended spectrum. This present observation is similar to the findings of Paudal KR et al.^[8] Fayisa et al.^[10] Regarding the analgesic, antiseptic, vitamins used for this group of patient the Dental surgeon seems to select Paracetamol, Chlorhexidine, Vitamin wisely with their clinical practice. Such type of observations were published by (Paudal KR et al).^[8] The use of paracetamol which is having the gastrofriendly property of analgesic and antipyretic but no anti-inflammatory property is selected for such type of patients.

The present study shows that metronidazole containing prescription (17,4.8%) is mainly for the periapical abscess. However the prescription of metronidazole is irrational as per the findings of Nuvvula Siva Kumar et al.^[11] JJ Segura Egea et al.^[12] because the pulpitis is an inflammatory condition which can be relieved by endodontic treatment. The drugs which are prescribed for this group of patient are mainly from the NLED but the prescription of the drug is on brand / proprietary name.

CONCLUSION

The present study showed that pharmacotherapy is indispensable in paediatric dental care. Analgesics and antibiotics mostly paracetamol and amoxicillin are the mainstay in pharmacotherapy in paediatric dental care and the prescription of the drugs is on brand /proprierty name in solid doses forms. The duration of treatment is more or less for 5 days with a frequency of administration of drug is twice a day. Further it shows the maximum number of patient is in the age group of 5-7 years with a common problem of chronic irreversible pulpitis. To improve the drug prescribing pattern with cost effective

treatment of paediatric dental problem management the regular mass awareness programme on rational use of drug is suggested to carry out by the concern authority.^[3,14]

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