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PAEDIATRIC PRESCRIPTION ANALYSIS IN A PRIMARY HEALTH CARE INSTITUTION

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Abstract:
In developing countries children comprise of large population proportion. This age group is highly vulnerable to morbidity. Therefore special attention is required for their health. Harmful effects of medicine could easily affect this age group. However, irrational prescription of medicines in this group of patients is reported to be widespread. One of the most documented irrational and excessive uses of antibiotics has mentioned pediatric group. Irrational antibiotic use can lead to antimicrobial resistance, treatment failures, and increased healthcare costs. Prescription analysis is a valid evaluation tool used for the evaluation of prevailing disease and the common use of drug in specific community.
It was a prospective study. 420 participants were included in the study and the ages ranged were between 28 days to 12 years. Patients who came to avail medical consultations were asked to participate in the study. A written informed consent was signed by the parents or guardians after explaining the purpose of the study. The form was explained to them in their first language. People who were not willing to giving informed consent and those who came for vaccination were not included in the study.
The current study has shown that in primary care level proper policies and steps to make essential drugs is lacking and by fulfilling these issues the rational prescription can be achieved. Regulatory authorities are advised to design a uniform prescription pattern and staff is supposed to follow that to avoid over prescription of antibiotics. Interventions aimed to improve the knowledge and train the staff to follow the proper guidelines and prescription patterns. Further researches are recommended to evaluate the imparting these rules and policies to health care staff.

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INTRODUCTION:

In developing countries children comprise of large population proportion. This age group is highly vulnerable to morbidity. Therefore, special attention is required for their health. Harmful effects of medicine could easily affect this age group. However, irrational prescription of medicines in this group of patients is reported to be widespread. One of the most documented irrational and excessive uses of antibiotics has mentioned pediatric group. Irrational antibiotic use can lead to antimicrobial resistance, treatment failures, and increased healthcare costs. Prescription analysis is a valid evaluation tool used for the evaluation of prevailing disease and the common use of drug in specific community.

The cause of worsening or prolongation of acute illness, unreliable and ineffective treatment, and distress and harm to the patient with higher cost is due to irrational prescription. And it could happen due to multiple factors such as patient pressure, bad example of colleagues and high-powered salesmanship. Rational use of drug is very important in which right drug is prescribed for the right condition in right dose and duration and gives accurate and proper information about any side effects. Prescription analysis could elaborate it properly and helps in the management of antibiotic administration which is the main cause of preventing antibiotic resistance.

Proper drug prescription is the cost-effective solution to health problems. If the prescribers have access to essential drugs on regular basis patients can be treated in rational way. Whereas pediatric prescriptions are difficult than adults because many drugs are contraindicated due to the age group and according to their weight it has minimized the criteria. Studies have conducted in many tertiary centers about the prescription pattern but in pediatric primary health care institutions very limited studies have been conducted.

The aim of the current study is to evaluate the pediatric prescription analysis at primary care level.

MATERIALS AND METHODS:

It was a prospective study. 420 participants were included in the study and the ages ranged were between 28 days to 12 years. Patients who came to avail medical consultations were asked to participate in the study. A written informed consent was signed by the parents or guardians after explaining the purpose of the study. The form was explained to them in their first language. People who were not willing to giving informed consent and those who came for vaccination were not included in the study. To avoid the biasness researchers were seated outside the department so that doctors inside would not aware of the study and biasness in the prescription could be avoided. Other factors such as percentage of medicine either it is properly labeled or not and how much knowledge about when and what quantity should be administered to the child were also analyzed. Facility indicators were also analyzed by exploring about the facilities in the institution of availability of essential drugs, availability of clinical guidelines and the percentage of key drugs available in the institution. The format of prescription which is prescribed by Pakistan Medical Council is the major parameter was also analyzed it contains patient details, weight of the patient, whether prescription written in capital letters, signature of the doctor and the pharmacist.

The essential drug list prepared by the Medical Service Corporation Limited (MSCL) is used in the study. SPSS was used to analyze the data. Categorical data was presented in the form of table, frequencies and percentages. Relevant inferential statistical tests were used to determine the level of significance with P values <0.05 5 considered significant. The confidentiality of the prescriptions was assured. No names were entered in the database, and each prescription was given a unique identifier number for the handling of data.

RESULTS:

480 patients were enrolled in the study but 60 patients were excluded from the study because they did not meet the inclusion criteria. The ages ranged from 28 days to 12 years during the 3 months period of the study. The mean age of the participants was 6.4 (SD±3.1) years. Females were more s compared to male (228 versus 192). The weight of the participants was documented 59.3% of the prescriptions.

Only 28 prescriptions had written in capital letter whereas all the prescriptions were written in every detail with provisional diagnosis. All the prescriptions had signature of doctors who had prescribed but there was no signature on the prescriptions of dispensing person. The maximum numbers of drugs were given to them having upper respiratory infection.

About 1328 individual drugs were prescribed for upper respiratory infection. The average of prescriptions of number of drugs was 3.13 (SD±28.31). 15 prescriptions were having no drug

prescribed. To all those with no prescription were come with wounds for which local cleaning and dressing were done. The only zinc syrup was not available in the hospital pharmacy and was prescribed to purchase from outside. Drugs were prescribed in eight different dosage forms. Seven different dosages were prescribed for drugs were as syrups were mostly prescribed 65% and use of injection was very less.

Major antibiotics were used for treatment. 303 participants out of 420 were prescribed antibiotics. Total number of drugs prescribed antibiotics was constituted about 32.5%. 303 participants were prescribed single antibiotics. Children presented with acute upper respiratory infections, lower respiratory infections, conjunctivitis and chicken pox were prescribed with antibiotics. Six children who presented with wounds were also prescribed antibiotics. Most commonly prescribed antibiotic was azithromycin.

However, child presented with acute gastroenteritis was prescribed oral rehydration salts. In these children antibiotics and anti-diarrheal drugs were not prescribed. 24 patients with diarrhea were prescribed with zinc syrup. Nine children who presented with acute diarrhea were given I.V fluids. 97% drugs were dispensed by the hospital pharmacy. About 97.88% patients were fully acknowledged about the correct dosage of drugs which were prescribed.

Discussion

The performance of prescribers was measured by core prescribing indicators whereas the experience of patient at health care center measured by patient care indicators and the facility indicators measure whether the health personnel can function smoothly and effectively. Prescribing indicators were analyzed by scrutinizing the prescriptions written by the doctors in the institution. WHO has recommended the value of average drugs per patient which lower in current study 2.28 to 2.1 that is also less than the previous studies. In our study the range of drugs prescribed is from 0-3 and maximum number of drugs per prescription is also three which is less than provided in similar literature.

There must be less prescription of number of drugs as low as possible to avoid the chances of drug interaction and side effects which increases with the increase in dose and also had negative influence on hospital management.

The age ranged of the current study was similar to other studies which have previously done. In the toddler age breast feeding is adequate in children protection. The number of drugs prescribed in their generic name was more than other studies. The main reason was the availability of drugs in the hospital and provided to patient free of cost. One study has more antibiotic prescription as compared to current as this study has shown 74.3% prescription of antibiotics whereas other literature has shown more percentage of it.

There must be serious concern given to all the disease diagnosed with upper respiratory infection those were given antibiotics as upper respiratory infection is viral and it has nothing to do with anti-bacterial agents. To avoid antibiotic resistance there must be given attention to not prescribe antibiotics in viral diseases. Proper investigation and interventions were needed in order to limit the overprescribed antibiotics from the institutes. In current study there was no antibiotic prescribed to the patients suffering from anti-diarrheal disease which is positive finding as compared to the other studies. Injections were also very limited in the current study as compared to the other studies. All the drugs dispensed were in the essential drug list and were available in the hospital and in correct doses. The current study has shown the accurately labeled drugs and is higher than the previous studies.

Only 59.3% patients body weight was recorded which needs to be improved and all the patients must be documented. There was no signature of dispensing person in any prescription. And in majority of the prescription capital letters writing was not used. Therefore, there must be proper training administered and aware them about the issues which are needed to solved. There should be proper facilitation in terms of drug storage as the temperature exceeds 40 degree and it may result in the loss of efficacy of drugs.

CONCLUSION:

The current study has shown that in primary care level proper policies and steps to make essential drugs is lacking and by fulfilling these issues the rational prescription can be achieved. Regulatory authorities are advised to design a uniform prescription pattern and staff is supposed to follow that to avoid over prescription of antibiotics. Interventions aimed to improve the knowledge and train the staff to follow the proper guidelines and prescription patterns. Further researches are recommended to evaluate the imparting these rules and policies to health care staff.

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