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Research Article

Pattern of analgesic use in hospitalized children at a pediatric general ward in a tertiary care teaching hospital

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ABSTRACT

Background: analgesic use is common in adults but their use in children has not been extensively studied. This observational study was envisaged to study prevalence and pattern of analgesic use in hospitalized children in pediatric general ward.

Methods: 120 patients were included in the study. Disease was classified as per ICD-10 and medicines used were classified according to ATC classification. WHO indicators for rationality was used. Descriptive statistics was used to present the data i.e. percentage; proportions, frequency, mean and standard deviation using Microsoft excel worksheet.

Result: A total of 791 drugs from different classes were prescribed to 120 patients with a mean of 6.6 ± 2.68 drugs described per patient during their stay in the hospital. 81 analgesics were prescribed. 25 were prescribed as fixed dose combination. Paracetamol was the most commonly prescribed non steroidal anti-inflammatory agent.

Keywords: analgesics, children, fixed dose combinations

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INTRODUCTION

Children are not small adults. Children are our future. They constitute about one third of the population but in spite of that they have been left behind in field of clinical research because of the complexities and ethics concerned with their participation in clinical trial¹. They are prescribed a variety of medicines commonly. On an average a child is prescribed 0.8-3.5 medicines per year on outdoor visits to clinicians in spite of the lack of information on pediatric dosing for most of the drugs².

Analgesics are one of the most commonly used class of drugs in adults and prevalence and pattern of their use has been very well studied but it is somewhat lacking in children. Use of analgesics in children is not so common as compared to adults. It might be due to different spectrum of disease. But many studies have pointed out the inadequacies in pain management particularly in children. Methods like distraction, mother touch, toys and other methods are deployed for pain management and efficacy of these methods are a bit questionable. Most of the analgesics are associated with hepatic and renal toxicities on long term use in adults and study of long term effects of these drugs has been lacking in children^{3,4}. So this study was envisaged to study the prevalence and pattern of analgesic use in children.

MATERIALS AND METHODS

This observational cross-sectional study was carried out in Himalayan Institute of Medical Sciences, Swami Ram Nagar, Dehradun, in the Department of Pharmacology and the Department of Pediatrics over a period of twelve months after obtaining ethical clearance from the Institutional Ethics Committee.

Sample size:

A total of 120 patients admitted in the pediatric general ward were included in the study.

Inclusion criteria

Patients less than 18 years of age admitted in pediatric general ward with minimum 5 days of stay in the hospital.

Exclusion criteria

1. Oncological patients and those with chronic diseases
2. Patients admitted in pediatric or neonatal intensive care

Study tools

1. Case recording form
2. World Health Organization’s core drug use indicators for rationality of drug use.

Study protocol

Patient details (age, weight, anthropometric measurements), prescription drug details(indication, dose, frequency) and other relevant information were recorded as per the case recording form after obtaining written informed consent from parent/legal guardian and assent from school going children.

Data Management and Statistical Analysis

Descriptive statistics were used to present the data i.e. percentage; proportions, frequency, mean and standard deviation using Microsoft excel worksheet

RESULTS

A total of 791 drugs from different classes were prescribed to 120 patients with a mean of 6.6 ± 2.68 drugs described per patient during their stay in hospital. The average duration of stay in the hospital was 8.5 ± 3.24 days. The mean age of the patients admitted was 5.5 ± 5.12 years. The male to female ratio was 2.42 with a slight preponderance of males .The most commonly prescribed class of drugs were antimicrobials, followed by drugs acting on the alimentary system and those acting on the nervous system and analgesics.

Paracetamol was the most commonly prescribed analgesic and fever was the most common indication for prescription. Of all the analgesics prescribed only 2 were prescribed by parenteral route and rest were prescribed orally. Out of the 81 analgesics prescribed in the study, 68 were prescribed by brand names and 13 were prescribed by generic names. 25 patients received analgesics as Fixed Dose Combination (FDC). Among the FDCs prescribed, combination of paracetamol with other NSAIDs was more common followed by combination of paracetamol with antihistaminics and alpha agonist. Liquid oral dosage formulation (syrup, drops) was the most common dosage form followed by tablets.

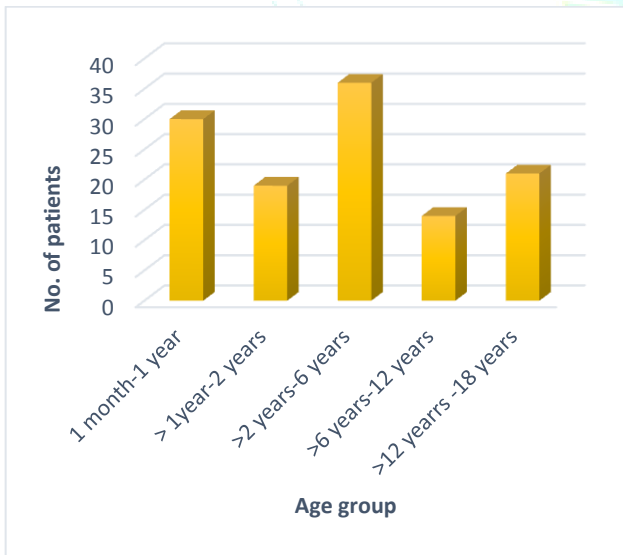


Figure 1: Age wise distribution of patients included in the study

Out of the 791 drugs prescribed to the 120 patients, 81(10.24%) were analgesics. All the analgesics prescribed were Non Steroidal Anti-Inflammatory Agents (NSAIDs).

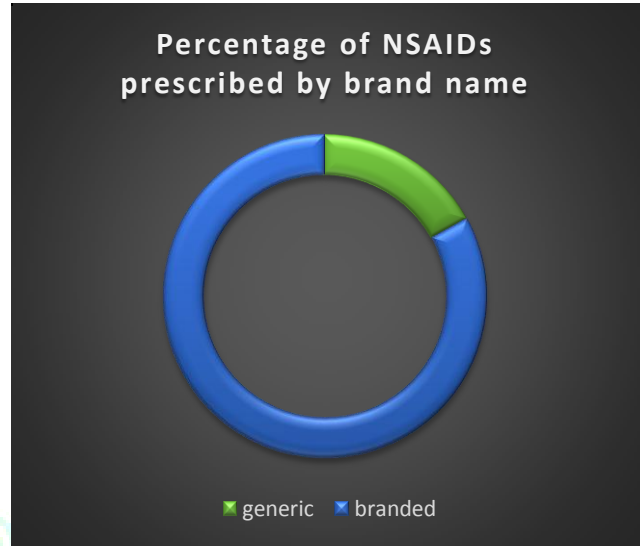


Figure 2: percentage of NSAIDs prescribed by brand names

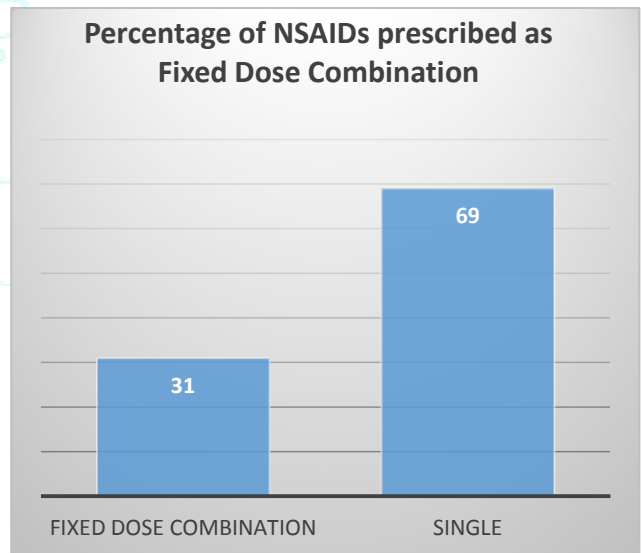


Figure 3: NSAIDs prescribed as FDC

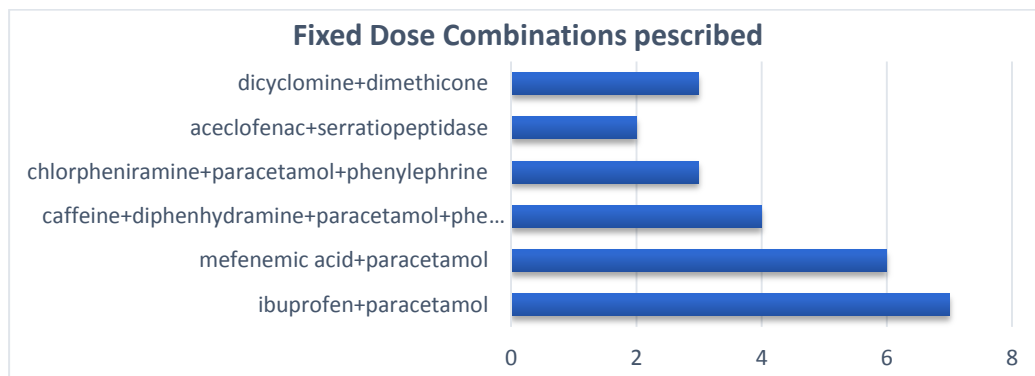


Figure 4: Components of the FDCs prescribed

DISCUSSION

In this study the prevalence of analgesics prescribed is approximately 10% which is less compared to other similar studies in which the prevalence is around 30%-50%^{2,5,6}. The reason behind this may be the different disease profile of the patients admitted. The prevalence of analgesic use is comparable to another study from Germany in which the prevalence of analgesics se was 20%⁷. The most commonly prescribed analgesic was paracetamol which is similar to other studies^{5,8,9}). The most commonly prescribed dose of paracetamol was 15mg/kg which is comparable to other studies⁸⁻¹⁰. About 68% of NSAIDs were prescribed by generic name which is higher than other similar studies^{11,12}. About 31% of the NSAIDs were prescribed as fixed dose combination which is comparable to other studies^{7,9,10}. The most common FDC used were those of paracetamol along with other NSAIDs like ibuprofen and mefenemic acid which is similar to the other studies^{7,9}. Other FDCs were those of paracetamol along with antihistaminics like chlorpheniramine, diphenhydramine and alpha agonists like phenylephrine. The rationality of combinations of paracetamol with antihistaminics and alpha agonists is questionable. In this study the rationality of the fixed dose combinations was not assessed which should have been done as it may provide information on the prevalence of irrational FDCs prescription in children in whom the safety and efficacy data is lacking⁷.

CONCLUSION

Findings of the study highlight need for reinforcing rational prescribing practices and increasing awareness among physicians and medical students. Irrational FDCs are being commonly prescribed and there is an urgent need to curb these harmful practices by stringent regulations and developing local guidelines for rational prescribing. Although usage of analgesics were conforming to WHO recommended standards, there is a need to improve prescription pattern by generic name and to focus on the rationality of fixed dose combinations.

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Conflict of interest: None

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