

Prescribing pattern in orthopedics outpatient department of a medical college in India

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ABSTRACT

Background: Periodic evaluation of drug utilization pattern is necessary to promote rational drug use by. In orthopedics practice, the prescribing pattern needs to be regularly monitored since many of the drugs prescribed carry untoward adverse effects. In this backdrop, the present study was conducted to explore the prescribing pattern in orthopedics outpatient department (OPD) of a medical college in Eastern India.

Methods: A cross-sectional study was conducted at a Tertiary Care Medical College in West Bengal. The prescriptions of all consecutive patients attending the orthopedics OPD for the first time (except post-surgical follow-up) were included in the study. Data analysis was done using descriptive statistical methods: frequencies, percentage, mean, and standard deviation.

Results: A total of 837 prescriptions were analyzed with an average number of drugs per prescription being 2.57. Among the drugs, non-steroidal anti-inflammatory drugs were most commonly prescribed (64.14% [1383/2156]) followed by anti-ulcer drugs (13.58% [293/2156]), centrally acting muscle relaxants (21.4% [323/1516]), multivitamins and minerals (9.09% [196/2156]), and others (antibiotics, anti-gout drugs, etc.) (5.12% [110/2156]). Drugs were prescribed in the generic name in 35.72% (770/2156) of prescriptions. A total of 71.56% (1543/2156) of drugs were prescribed from national essential medicine list. Antibiotics were prescribed in 53 encounters (53/2156 [2.46%]) and 93 prescriptions (4.38%) mentioned administration of injectables. The frequency of drug administration and the duration of treatment was mentioned in 87.81% (1893/2156) and 82% (1768/2156) of the prescriptions, respectively.

Conclusion: The current piece of work pointed out certain lacunae in the prescribing practices of the orthopedicians of the institute as evidenced by low generic prescribing, inadequate information about the duration of therapy and frequency of administration in many prescriptions.

Keywords: Prescribing pattern, Orthopedics, Outpatient department

INTRODUCTION

Drug utilization has been defined as the marketing, distribution, prescription, and use of drugs in a society with special emphasis on the resultant medical and social consequences.¹ The recent changes in the drug prescribing pattern, increased concern over adverse drug reactions and escalation in the drug pricing have increased the importance of drug utilization studies.² A periodic evaluation of drug utilization pattern has become necessary to promote rational drug use by increasing the therapeutic efficacy while decreasing the occurrence of untoward adverse effects. To promote rational use of drugs in developing countries, international agencies such as the World Health organization

(WHO) and the International Network for the Rational Use of Drugs have evolved standard drug use indicators.³ In orthopedics practice, the prescribing pattern needs to be regularly monitored since many of the drugs prescribed carry untoward adverse effects. Earlier research conducted with similar objective have revealed that drugs commonly prescribed in orthopedics outpatient department (OPD) such as non-steroidal anti-inflammatory drugs (NSAIDs) increase the risk of hospitalization and death from gastrointestinal bleeding and perforation.⁴

A literature search was conducted which consisted of a Medical Literature Analysis and Retrieval System Online database search (accessed on 14 April 2010) and a World

Wide Web search (Search engine: Google, accessed on 14 April 2010) using the following keywords: drug utilization study, orthopedics, and OPD. The search revealed that there exists a paucity of data on the prescribing pattern in orthopedics OPD, particularly in India. Though the pattern of NSAIDs use in orthopedics, OPD has been studied in India,^{5,6} data regarding overall drug utilization in orthopedics OPD is absolutely lacking. A study with such objective has been conducted in Nepal⁷, which was however limited by the fact that a total number of prescriptions evaluated fell short of WHO guidelines on the conduct of drug utilization studies.³ In this backdrop, the present study was conducted to investigate the prescribing pattern in orthopedics OPD in a tertiary care medical college India using WHO suggested prescribing indicators.

METHODS

A cross-sectional study was conducted at a Tertiary Care Medical College in West Bengal to address the study objective following approval from the Institution's Ethics Committee. The orthopedics OPD of the institute was considered as the sampling unit of the study. Data were collected prospectively from the OPD between 9 am and 2 pm, thrice a week on alternate days excluding weekends and holidays for a period of 2-month (1st June 2010-31st July 2010). The prescriptions of all consecutive patients who were attending the OPD for the first time were considered in the study and assessed prospectively using a pre-designed form. Surgical follow-up cases attending OPD for the first time were however excluded from the study. The patients were explained the purpose of the study following which informed consent was obtained from them. A member of the study team collected the prescription from the patient and entered information in a pre-designed form. In the pre-designed form, all the drugs prescribed were noted including dose, route, dosage form, frequency of administration, indications for prescription, and duration of therapy. The total number of drugs, number of antibiotics, and injectables prescribed per prescription were also recorded in the form.

As per the WHO recommendation, to conduct drug utilization study, a single health care facility should measure facility specific prescribing indicators with a 95% confidence limit plus minus 10%.³ Accordingly, it has been recommended that at least 600 encounters or more should be included in a cross-sectional survey for a single center. In the present study, we have considered 873 encounters. The filled-in forms were checked for completeness and analyzed using Statistical Package for Social Sciences program version 10 (Chicago, IL, USA). Data analysis was done by using descriptive statistics: frequency, percentage, mean, and standard deviation (SD).

RESULTS

During the study period, a total of 1023 patients attended the orthopedics OPD for the first time (first time encounter).

However, 177 patients were excluded from the study as they attended the OPD first time for post-surgical follow-up and 9 patients refused to share their prescription with the study team. Thus, prescriptions from 837 patients were available for analysis. The age of the patients ranged from 4 to 78 years with mean (SD) of 43.07 (9.82) years. The total number of male patients (513 [62.71%]) clearly outnumbered their female counterparts (324 [37.29%]) giving a male:female ratio of 1.68:1. The total number of drugs prescribed in the analyzed prescriptions analyzed was 2156. Thus, an average number of drugs per prescription amounted to 2.57.

Patients suffering from different ailments attended the orthopedics OPD during the study period (Table 1). The most common disorders diagnosed were a low backache followed by sprain/muscle spasm, cervical spondylosis, fracture or its sequel (e.g., cubitus varus), osteoarthritis involving different joints, rheumatoid arthritis, and others (Table 1). The frequency of drug administration was recorded in 87.81% (1893/2156) and the duration of treatment was mentioned in 82% (1768/2156) of the drugs prescribed.

Among the drugs, NSAIDs were the most commonly prescribed (64.14% [1383/2156]) followed by anti-ulcer drugs (13.58% [293/2156]), centrally acting muscle relaxants (21.4% [323/1516]), multivitamins and minerals (9.09% [196/2156]), others (antibiotics, anti-gout drugs, etc.) (5.12% [110/2156]). Drugs were predominantly prescribed in brand name 64.28% (1386/2156). The total of 71.56% (1543/2156) of drugs were prescribed from national essential medicine list of India. Antibiotics were prescribed in 53 encounters (53/2156 [2.46%]) and 93 prescriptions (4.38%) mentioned the use of injectables.

DISCUSSION

Rational use of drugs plays a key role in promoting human health and well-being. In this perspective, a drug utilization study is an important tool in assessing the rationality of prescriptions. In the current piece of work, we considered 837 patient encounters which were higher than the study conducted by Shankar et al., in Nepal (186 patient encounters).⁷

Table 1: Distribution of diseases among 837 patients.

Disease	Number of prescriptions n=837 (%)
Low backache	383 (45.76)
Sprain/muscle spasm	102 (12.19)
Cervical spondylosis	99 (11.82)
Fracture or its sequel (e.g., cubitus varus)	97 (11.58)
Osteoarthritis involving different joints	86 (10.27)
Others (gout, rheumatoid arthritis, etc.)	70 (8.38)

The most common disorders diagnosed in these patients were the low backache followed by sprain/muscle spasm, cervical spondylosis, fracture or its sequel (e.g., cubitus varus), osteoarthritis involving different joints, rheumatoid arthritis, etc. This finding is in concordance with the findings observed by Shankar et al., where the low backache, fracture, spondylosis, muscle sprain topped the list of ailments for which patient sought medical help in OPD.⁷

In the current piece of work, NSAIDs were the most commonly prescribed medicines followed by anti-ulcer drugs, centrally acting muscle relaxants, multivitamins and minerals, and others (antibiotics, anti-gout drugs, etc.), which is similar to the study conducted by Shankar et al., where NSAIDs topped the list followed by multivitamins and minerals, anti-ulcer drugs.⁷

The indicators of prescribing practices as suggested by WHO measure the performance of health care providers in several key aspects related to the rational use of drugs. The WHO suggested prescribing indicators consider an average number of drugs per prescription as an important indicator of polypharmacy.³ The number of drugs per prescriptions should be kept as low as possible particularly in orthopedic setting where higher figures culminate in increased risk of drug interactions, increased hospital cost, and errors of prescribing.⁴ In the present study, average number of drugs per prescriptions was 2.57 which was higher than the study conducted by Shankar et al. (1.9).⁷ However, similar figures have been obtained in earlier studies conducted in eye OPD in an Indian hospital (3.03).⁸

In the current piece of work, the percentage of drugs prescribed by generic names was 35.72% which was higher than the earlier study conducted by Shankar et al. (19.3%).⁷ Recently, regulatory authorities of different countries are advocating for generic prescribing to tame healthcare expenses. In a resource-constrained country like India, generic prescribing remains the only plausible solution for reducing the drug price and consequently increasing peoples' access to medicine. Similar endeavors have also been undertaken up by the local state government which accounts for such high figures in the present study. However, there remains a scope to increase such practice by appropriate sensitization of the clinicians to generic prescribing and restricting the frequent visit of the medical representatives in health.

The percentage of prescription of antibiotics in the present study was 2.46% and this in congruence with the findings of Shankar et al. (3.8%).⁷ According to WHO, up to 25% prescription with antibiotics is expectable in most of the countries where infectious disease is more prevalent.³ In the current piece of work, the total of 71.56% (1543/2156) of drugs were prescribed from national essential medicine list, India. This was higher than the study conducted by Shankar et al., where it was 45.2%.⁷

The short period of 2-month for this study can be considered as a limitation to this study because an adequately powered study conducted over a longer time frame could capture the seasonal variations in different orthopedic ailments with consequent changes in prescribing behavior.

Thus, overall the current piece of work points certain lacunae in the prescribing practices of the institute such as low generic prescribing, lack of mentioning frequency of administration, and duration of therapy in many prescriptions. This calls for an urgent need for proper sensitization of the clinicians in the art of rational prescribing which can be achieved by through short-term training sessions, continuing medical education, prescription audits at regular intervals.

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