Original Article

Prescribing patterns of a garment medical centre in Bangladesh

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ABSTRACT :

Objectives: The aim of the study was to audit the prescription and dispensing pattern in a garment medical center to observe the rational use of drug. Irrational use of medicine is a global problem. Polypharmacy, injudicial use of antibiotics, unnecessary use of vitamins are commonly seen in Bangladesh. To find out the current status of the prescribing and dispensing practices and identify factors underlying irrational prescription writing in a Garment medical center for factory workers in Gajipur and to sensitize the future prescribers about the rational prescriptions, this study was carried out.

Materials and methods: A cross-sectional descriptive study was carried out to analyze the patterns of prescriptions by using World Health Organization , WHO/INRUD- core drug prescribing indicators and some additional indices.

Place and period of study: A total of 300 prescriptions of the patients (garment workers) who had attended in Hannan Textile and Garment Medical Centre, Board Bazar, Dhaka, Bangladesh in between January and November'2008 were considered for analysis.

Results: The average number of drugs per prescription was 3.1 and no single drug was prescribed by generic name. Use of antibiotic (50% of encounters) was frequent. Only 50.75% drugs were prescribed from national essential drug list (EDL). Percentage of encounters with an antiulcerant, a NSAID and a multivitamin & multimineral prescribed were 41.67%, 46.67% and 23.67% respectively.

Conclusion: This study revealed some of irrational practices like poly pharmacy, overuse of antibiotics and vitamins, no use of generic names, and less prescribed from essential drug list. It is suggested that the periodic evaluation of prescribing practices at the healthcare facilities should be done by proper involvement of physician, nurse and pharmacist for the rational use of medicine.

INTRODUCTION

The irrational and inappropriate use of drugs is a well documented universal problem & is a major concern for both in developed and developing

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countries, as has been recognized by the World Health Organization (WHO).[1]

Now-a-days the prescribing pattern is changing and it has become just an indication of medicine with some instructions of doses without considering its rationality.[2]

The common irrational prescribing patterns include polypharmacy, drugs prescribed by trade names, inappropriate use of antimicrobials, unnecessary use of tonics and other non-essential drugs.[3]

Irrational drug use leads to reduction in the quality of drug therapy, wastage of resources, increased treatment cost, increased risk for adverse drug reactions and emergence of drug resistance.[4]

Drug prescribing habits are rarely evaluated in garment factory of Bangladesh. A study found that 45% of the female respondents did not go to any doctor while they were sick. In most cases workers sought their own treatment for diseases like fever, diarrhea, and urinary tract infections by buying over-the-counter medicines. Major reasons for not taking treatment are the cost, time constraints and most importantly, not having onsite health facilities. It is estimated that only about 10% of factories provide a doctor and about 20% provide first aid facilities on site.[5]

Keeping all these facts in consideration, the present study was planned to define the pattern of drug use in a garment factory (Hannan Textile and Garment, Board Bazar, Dhaka) of Bangladesh.

It may also help the clinician to take appropriate measure for the improvement of prescribing patterns and to prevent prescribing errors and thus promote rational use of medicines.

METHODOLOGY

A cross-sectional descriptive study was carried out at the Hannan Textile and Garment, Board Bazar, Dhaka, Bangladesh. The study was carried out over a 10 months period from January' 2008 to November' 2008. A total of 300 patients were included in the study from the prescriptions of the patient, treatment record and pharmacy record of the Garment medical center. New patients attending the medical centre of this garment during the study period were considered for analysis. Follow up visits during the study period were included and were counted as separate visits but those patients who were referred for the out hospital / clinic for better management were not included in the study.

The average number of drugs per prescription, percentage of drugs prescribed by generic names, percentage of encounters with an antibiotic and an injection prescribed, percentage of drugs prescribed from Essential Drug List (EDL) of Bangladesh and percentage of encounters with an antiulcerant, a NSAID and a multivitamin & multimineral prescribed were calculated. The data was expressed as percentage, mean and total numbers.

RESULTS

A total of 940 individual drugs were prescribed for 300 prescriptions, giving an average of 3.1. The range of drugs per encounter varied from 1-5. There was not a single prescription wherein no drug was prescribed. As shown in Table I, four (4) drugs were prescribed in 115 prescriptions (38.33%) was found to be highest among 300 prescriptions. About 23.67% (71) patients were prescribed up to 2 drugs and the rest 76.33% (229) patients were prescribed 3 to 5 drugs. No single drug was found to be prescribed by generic names.

Table I: Number of drugs prescribed per prescription

Prescription containing number of drugs	Number of prescriptions (%) N (%)
One	21 (7.00)
Two	50 (16.67)
Three	109 (36.33)
Four	229 (76.33)
Five	05 (1.67)
Total	300 (100)

Table II: **Drugs prescribed from national EDL**

Drugs	**Total number of drugs (%) N= 940**
Included within EDL	477 (50.75)
Excluded from EDL	463 (49.25)

Table III: **Five most commonly prescribed drugs which were included within or excluded from the national EDL**

Drugs	**Number of prescriptions (%) N = 300**
Included within EDL	
Paracetamol	105 (35)
Omeprazole	61 (20.33)
Vitamin B complex	56 (18.67)
Amoxicillin	41 (13.67)
Metronidazole	34 (11.33)
Excluded from EDL	
Pheniramine maleate	99 (33)
Multivitamin & multimineral	71 (23.67)
Calcium carbonate	59 (19.67)
Ranitidine	55 (18.33)
Domperidone	27 (9)

Table IV: **The overall findings for the WHO core prescribing indicators**

WHO core prescribing indicators	
Average number of drugs per prescription	3.1
Percentage of drugs prescribed by generic name	0
Percentage of encounters with an antibiotic prescribed	50
Percentage of encounters with an injection prescribed	0
Percentage of drugs prescribed from national essential drug list	50.75
Some additional indices:	
Percentage of encounters with an antiulcerant prescribed	41.67
Percentage of encounters with a NSAID prescribed	46.67
Percentage of encounters with a multivitamin prescribed	23.67

In the present study, the percentage of encounters with an antibiotic and an injection prescribed were 50% and 0% respectively.

It was also seen that out of 300 prescriptions 125 (41.67%) had at least one multivitamin and multimineral prescribed which was not included in national EDL. Only 477 drugs (50.75%) out of 940 drugs in 300 prescriptions were prescribed from the national EDL. (Table II).

In the present study, the most commonly prescribed essential and non-essential drugs were paracetamol (35%) and pheniramine maleate (33%) respectively. The five most commonly prescribed drugs which were included within or excluded from the national EDL are shown in Table III.

DISCUSSION

A prescription by a doctor may be taken as a reflection of physicians' attitude to the disease and role of drug in its treatment. It also provides an insight into the nature of the health care delivery system.

With regard to the average number of drugs per prescription, the value found in the present study was 3.1. In similar studies conducted, the lower values found were 1.65 in Zimbabwe,[6] 2.7 in India[7] and 2.91 in Nepal.[8] It also showed that more than 3/4th of the patients (76.33%) were given three or more drugs.

Since, WHO has recommended that average number of drugs per prescription should be 2.0,[9] so the results of the study reflect polypharmacy, which may lead to adverse drug reactions, increase the risk of drug interactions, dispensing errors, medication errors, decrease adherence to drug regimens and unnecessary drug expenses.

Use of generic names in prescription eliminate the chance of duplication of drug products and also reduce the cost of the patient.[10]

The percentage of drugs prescribed by generic name was 0% in the study which is very much less than that reported in studies conducted in Cambodia (99.8%),[11] India (73.4%)[12] and Nepal (21.3%).[13] The most common reasons for not prescribing generic name in Bangladesh may be tradition, low production of generic drugs in Bangladesh and currently, most of the pharmaceutical companies divertive drug promotion technique.

In the present study, the percentage of encounters with an antibiotic prescription was 50% which is comparable with the results of Norway (48%).[9] In similar studies conducted, the antibiotic prescription is remarkably less than that reported in Iran (61.9%)[14] and high than that reported in Nepal (28.3%)[15].

According to WHO, 15-25% of antibiotics encountered is expectable in the countries where an infectious disease is more prevalent.[4,16] In a 3rd world developing country like Bangladesh, prevalence of infectious diseases is higher than the developed countries. That is why; in this study the antibiotic utilization rate was higher than that of developed countries. However, this result does not indicate that the prescription pattern was better than in other countries.

The WHO recommended target for injection exposure is 10% or less.[16] In this study, the percentage of prescriptions with an injection encountered was 0%. So the observed proportion of injectable drugs prescribed is considered acceptable according to WHO recommendations. Minimum use of injections is preferred and this reduces the risk of infection through parenteral route and cost incurred in therapy.[15] This observation was due to the minimum facility services provided by the garment medical centre (First aid and primary health care services only).

It also showed that out of 300 prescriptions 71 (23.67%) had at least one multivitamin and multimineral prescribed which was not enlisted in EDL. The justification for this practice is not clear. However, some patients and doctors believe that the multivitamin supplement may induce or enhance the patient's appetite or relief from weakness.

In this study, the percentage of drugs prescribed from national EDL of Bangladesh was 50.75%. The possible reason for this lower value could be the prescribers lacking the understanding the importance of essential drug concept. The low rate of prescribing from EDL of Bangladesh may be also contributed by excessive use of multivitamin and multimineral, calcium preparation, antihistamine (pheniramine maleate) and antiulcerant (ranitidine) which are not enlisted in EDL of Bangladesh. So that the higher percentage of non-essential medicines prescription in this study is responsible for inappropriate use of medicines.

CONCLUSION

This study only give a baseline data regarding the patterns of prescriptions in working population in garment factory in Bangladesh to evaluate rational therapy. For achieving the goal of rational use of medicine, it is essential to choose right medicine should be administered in the appropriate manner, keeping the number of medicine as low as possible, using generic names, using the medicine appropriately after selecting consciously keeping the cost of the therapy low, following P-drug concept and by consulting the WHO or National essential drug list. Educational interventions like short course problem bases training programs or workshops in pharmacotherapy and rational use of medicine are required to rectify the overall situation.

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