PRESCRIBING PARADIGM IN A RURAL HOSPITAL OF WEST BENGAL

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ABSTRACT

Background: Studying drug use pattern among medical practitioners is of vital importance due to use of irrational drugs.

Objective: This observational descriptive cross sectional study was carried out to assess prescribing practice in the out-patient department of Block Rural Hospital of West Bengal.

Methods: By systematic random sampling technique total 160 prescriptions from all the prescribing recommendations of the out-patient department of the block rural hospital were studied. The data were collected by scrutinizing individual prescription of the eligible participants using predesigned, pretested schedule study tool during the study period of two months. The prescriptions were analyzed in the context of correctness of components of instructions and adherence to WHO core prescribing indicators.

Results: Overall, an average number of drugs per prescription were 3.01±0.02. Only 155(32.22%) out of the total 481 drugs were prescribed by generic names. Among *prescriptions* antibiotics were in *71.87 percent* and injectable preparations in *11.87 percent; 91.06 percent* drugs were prescribed from national list of Essential Medicines of India. In terms of correctness, content of the drugs prescribed, was unacceptable; adherence to WHO core prescribing indicators was poor.

Conclusion: Our study revealed that we need to identify loopholes regarding practices to improve the standard of prescriptions.

Key words: *Pr*escription, drug, WHO core prescribing indicators

INTRODUCTION

Drug prescription is a science as well as an art to convey the message from the prescriber to patient through the pharmacist. WHO and National Health Policy of India have emphasized on the use of essential drugs & prescription by generic names.[1] Rational drug prescribing is the use of the least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost and five important criteria for rational drug use are accurate diagnosis, proper prescribing, correct dispensing, suitable packing and patient adherence.[2, 3] Irrational drug prescribing is a major global problem of now and its consequences include ineffective treatment, unnecessary prescription of drugs-particularly antimicrobials and injections, development of resistance to antibiotics, ad-

verse effects and economic burden on patients and the society.[4,5] The concept of 'Essential drugs as those that satisfy the health care needs of the majority of the population; they should therefore be available at all times, in adequate amounts and in the appropriate dosage forms' was introduced for positive impacts of drugs on health status, particularly for developing countries.[6-8] Unfortunately more than half of all drugs are prescribed, dispensed, or sold improperly, half of patients fail to take them correctly and one third of the world's population lacks access to essential medicines [9]. A study on eight Ethiopian hospitals on prescription patterns noted irrational higher prescribing average number of drugs prescribed per encounter, percentage of injections, and percentage of antibiotic use. [10] However, another Ethiopian study found good signs of rational drug use. [11] The study of prescribing practice seeks to monitor, evaluate and if necessary, suggest modifications in prescribing patterns so as to make medical care rational and cost effective.[12] Moreover, Indian markets are flooded with over 70,000 formulations, as compared to about 350 listed in the WHO essential drugs list.[13] This study was undertaken to assess the correctness of prescribing practice and assessment of the prescribing indicators according to WHO core drug use indicator in the out-patient department of a rural hospital.

METHODS

An Observational descriptive Cross sectional study was conducted in Chittaranjan rural hospital situated in Bhatar block of Burdwan district of West Bengal. The person attended in

in the out-patient department of Bhatar hospital were constituted study population. Pre design and pretested questionnaire were used for review of prescriptions. For assessment of rationality of prescription the Pre-decided parameters were used viz, date of prescription, recording of chief complaints with history of present illness, findings of clinical examination, provisional diagnosis, whether follow-up visit, legibility of handwriting, signature with last name in full of Doctor, language used (English or vernacular), non-pharmacological treatment suggestions and advices, advices *containing antibiotic/s, encounters with an injection,* full name and strength of the prescribed drug, duration of treatment, directions with clear specification on the route of administration of drug/s, frequency of administration of the drugs, a*verage no of drugs per encounter, d*rug prescribed by generic name, *drugs prescribed from essential drug list among others.* Study period was two months (1st February –31 March 2013) while four weeks was spent for collection of data and another

four weeks for analysis, interpretation and write up..Average attendance in the outpatients department (OPD) of this rural block hospital during the study period was approximated to 180 -200 (based on previous year's attendance in corresponding months). Considering time constrains it was decided to study 20 prescriptions (10% of the total attendance i.e. 200) on each study day and every tenth person attending OPD constituted sample size.

Inclusion Criteria: All the prescriptions of the first day visit for any spell of illness was considered in our study. In follow up cases prescribing practice of the first day (Day 1) was taken into consideration for our data collection.

Exclusion Criteria: The prescriptions of the non-consenting persons were excluded and next prescription was considered for analysis in our sample. In the follow up cases the prescriptions were excluded from study where records of the first visit were missing.

Ethical clearance was obtained from Institute ethics committee. Data were collected by observing individual prescription of the eligible participant. Principal investigator personally collected data twice a week interchangeably among the first four OPD days in every week. In first week the data were collected on Monday and Tuesday; in the subsequent week on Wednesday and Thursday – in this way these two days were used for data collection. So in one month period of data collection i.e. in eight working days, total sample of 160 prescriptions were reached.

Data were entered in MS Excel sheet and checked thoroughly. Data were analyzed using standard statistical techniques by statistical software SPSS version 19.0.

RESULTS

Among 160 prescriptions under our study a total of 481 drugs were prescribed. Regarding correctness of components of prescriptions; chief complaints were mentioned in 27.50 percent, examination findings were recorded in 6.25 percent and follow-up visit mentioned in 3.12 percent. Provisional diagnosis was mentioned in 21.25 percent prescriptions. Most noticeable finding was that in none of the prescriptions, full signatures of the doctors with last name were present. Non-pharmacological treatment was suggested in 4.37 percent prescriptions. *At* least one antimicrobial agent was prescribed 71.87 percent and presence of an injectable drug was found in 11.87 percent prescription. [Table 1]

Table 1: Assessment of correctness of prescriptions (n=160)

Prescription Indicators	Prescription
Date mentioned	160 (100)
Chief complaints recorded	44 (27.5)
Examination findings written	10 (6.25)
Provisional diagnosis mentioned	34 (21.25)
Follow-up visit mentioned	5 (3.12)
Legibility of handwriting	132 (82.5)
Signature with last name in full	0 (0)
Language used (English)	160 (100)
Non-pharmacological treatment	7 (4.37)
Encounters with an antibiotic prescribed	115 (71.87)
Encounters with an injection prescribed	19 (11.87)

Figures in the parenthesis indicate percentage.

Table 2: Drug prescribing pattern in 160 prescriptions (n=481)

Prescription Indicators	Prescription
Full name of the drug	93 (19.33)
Strength of the drug	34 (7.06)
Duration of treatment	379 (78.79)
Directions specifying the route	436 (90.64)
Frequency of the drugs	433 (90.02)
Average no of drugs per encounter	3.01 ± 0.02
Drug prescribed by Generic name	155 (32.22)
Drugs prescribed from essential drug list	438 (91.06)

Figures in the parenthesis indicate percentage.

Among the prescriptions under study, full name of the drugs were written only in 19.33 percent of the total drugs. Strengths of the drugs were mentioned in 7.06 percent and duration of treatment was mentioned in 78.79 percent prescriptions. Frequencies of the drugs were mentioned in 90.02 percent prescriptions. Duration of treatment was mentioned in 78.79 percent of the drugs prescribed and directions with clear instruction regarding the route of administration were present in 90.64 percent. Prescription of the drugs by generic names was noted in 32.22 percent of the total 481 drugs prescribed. From WHO essential drug list 91.06 *percent d*rugs were prescribed. Average number (Mean ± SD) of drugs prescribed was 3.01 ± 0.02. It was revealed from the present study that in 66.25 percent prescriptions a minimum of three drugs were prescribed followed by two drugs in 12.50 percent and only in five *percent* prescription the researchers could find single drug. **[Table 2]**

DISCUSSION

The present study was an attempt to find the existing pattern of prescription writing in a rural hospital. Most of the prescriptions had no record of examination findings. This medical treatment practicing paradigm definitely poses much difficulty in tracking the course of the intervention of the natural history of diseases during the follow up visits. Also, use of authorized and unauthorized abbreviations, lack of information regarding complete dose, frequency, duration of therapy and illegibility could lead to medication errors during dispensing. All these issues may have substantial medico-legal implications too.

Prescribing many drugs at a time has probability to increase the potential for drug interactions and adverse drug reaction. Here average number (Mean ± SD) of drugs prescribed was 3.01 ± 0.02. A similar trend of polypharmacy was reported by others. [14-16] However, WHO had unequivocally recommended average number of drugs per prescription should be 2.0. [17]

Our findings regarding generic prescribing (32.22%) was comparable to studies carried out in India and the neighbouring countries. [14, 20, 21] However, several studies carried out in other countries, [18, 19] revealed that majority of the drugs was prescribed in generic names.

Most noticeable finding in present study was that in none of the prescriptions signature of the doctors with last name were present. Examination findings were recorded in only 6.25 percent prescriptions and provisional diagnosis was present in 21.25 percent prescriptions. Comparable findings regarding the incompleteness of the prescription of prescription was observed in different parts of the world by Mallet *et al.*, [22] Moghadamnia *et al.*, [19] Kumari R *et al* [14] , Jijin et al [23].

Our observation regarding the dominance of antibiotics in the prescription was similar to that of other studies. [14, 19, 21, 24]

Our study unearthed many gaps regarding prescribing practices among health care providers in rural Bengal. We, therefore, need to devise mechanisms to keep a check on the irrational prescription of drugs.

Limitations: Our study sensitized us to identify and fill up ambiguities regarding prescribing practices. Yet, this was only a revelation of the single study of a rural hospital.

Future directions: In our next phase of studies, we will try to cover three tier level of health system i.e. primary, secondary and tertiary level, if possible quaternary special care hospitals should also be included.

CONCLUSION

Our study concludes that there is an urgent need to develop standards of drug prescription and develop ways and means to ensure that they are ad-

hered to. We, therefore, need to devise mechanisms to keep a check on the irrational prescription of drugs. That despite all the efforts taken by the Government of India and WHO, the pattern of prescription in terms of completeness and rationality remain below expectation. Some of the important component of the prescription (drugs should be prescribed in generic names and signature of the prescribing doctors should be in full, not just initial) should be properly addressed. This could be done by making it mandatory for the prescribers to attend regular continuing medical education (CME), so as to update their knowledge. All these measures should be helpful in providing optimal, low cost, and effective medicines to the patients.

RECOMMENDATION

Special attention should be given to all level of health facilities, where significant irrational prescribing in terms of correctness as well as relative absence of the directions about the use of drugs was evident.

There is an urgent need to implement standard protocol for drug prescription in our state as well as national level.

Capacity building in terms of training and reorientation programme for the doctors and health care facilities should be strengthened.

Regular monitoring should be done to evaluate adherence to the prescription guideline protocol and find remedial measures.

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