GAVIN PUBLISHERS

Journal of Pharmaceutical and Pharmacological Sciences

Mini Review

Alsanosi S, et al. J Pharma Pharma Sci 03: JPPS-160.
DOI: 10.29011/2574-7711.100060

Writing a Drug Prescription

Safaa Alsanosi[1], Layla Ezzt Borham[1,2*]

[1]Department of Pharmacology and Toxicology, Faculty of Medicine, Umm Al-Qura University, Saudi Arabia

[2]Department of Clinical Pharmacology, Faculty of Medicine, Cairo University, Egypt

[*]**Corresponding author:** Layla Ezzt Borham, Department of Clinical Pharmacology, Faculty of Medicine, Cairo University, Egypt. Tel: +20966503567843; Email: borhaml@hotmail.com

Citation: Alsanosi S, Borham LE (2018) Writing a Drug Prescription. J Pharma Pharma Sci 03: 160. DOI: 10.29011/2574-7711.100060

Received Date: 11 January, 2018; **Accepted Date:** 16 January, 2018; **Published Date:** 24 January, 2018

Abstract

A prescription is an instruction from a prescriber to a dispenser. Prescription errors are common in general practice and can result in harm to patients. In most cases, errors in prescribing can be avoided with simple measures. Therefore, teaching good prescribing translates into a safe working environment. There is no international standard for prescriptions, and every country has its own regulations. The most significant requirement is that the prescription be legible and should indicate precisely what needs to be given. This paper reviews the basics of good prescribing, before, during and after the process of writing the prescription.

Keywords: Drugs; Good Prescribing; Medication Errors; Prescription; Teaching Prescribing

Introduction

A prescription is a direction, mainly written, by the physician to the pharmacist for the preparation and use of a medicine. Usually, prescribing has been limited to doctors or dentists [1]. The word prescribe comes from a Latin word meaning to write in advance [of giving a medicine]. However, the actual writing is a late event in the prescribing process. It need to be preceded by many other processes [2]. Each country has its own standards for the minimum information required for a prescription, as well as laws and regulations determining which drugs require a prescription, such as opiates, and who is eligible to write them [3].

Teaching Good Prescribing

Teaching prescribing has become increasingly difficult, as drug therapy has grown more complex and errors more common [3]. Prescribing requires a comprehensive knowledge and understanding of the pathophysiology of disease, the pharmacological properties of the relevant drugs, including their pharmaceutical, pharmacokinetic and pharmacodynamic properties and how those properties are interpreted into a therapeutic effect through a chain of biochemical and physiological events [2]. A study analysed the errors made by medical students in drug prescribing to gain a greater understanding of the reasons for non-optimal prescribing and of how to improve basic training in pharmacotherapeutics. The results showed the main cause of prescribing errors was the lack of a knowledge base that integrated scientific and clinical knowledge [4]. Furthermore, prescribing requires understanding how to measure the evidence on which drug therapy is based, as well as the effects of co-morbidity, adverse drug reactions and the cost-effectiveness of drug therapy [2,5]. A detailed understanding of these basic principles translates into good prescribing and helps provide prescribers with three crucial characteristics concerning the use of drugs:

- Knowledge and Understanding,
- Skills and
- Attitudes [6].

Before Prescribing

There are three main fundamentals that must be considered before prescribing a drug:

- The diagnosis must be exactly made and supported by an understanding of the basic pathophysiology (if a drug is not properly matched to the disease pathophysiology, the wrong choice may be made).
- The prescriber must measure the treatment's balance of benefit to harm and the prescriber and patient must discuss the planned treatment and its potential effects, both beneficial and

adverse, and careful monitoring is necessary for any dosage adjustment [2].

Furthermore, there are many practical matters related to the drug choice must be addressed, such as:

- Selecting the right drug from a range of alternatives,
- Designing the dosage regimen, and
- Considering the patient's susceptibilities that may lead to adverse drug reactions.

Drug Interactions

Drug interactions have a significant role in the practice of polypharmacy and can be defined as an interaction which happens when the effects of one drug are altered by the presence of another. Also, likely interactions with other drugs, including herbal formulations, and foods should be considered. The reasons for drug interactions, as well as their implications, are many-sided and include dosage form, therapeutic drug level, route of administration, drug metabolism, management period and patient factors, such as age, sex, body mass and genetic tendency [7]. Of all the prescriptions 2.39% (N=326) of the prescription showed drug-drug interactions according to a survey conducted in 2012 on polypharmacy and use of inappropriate medications [8].

During Prescribing

The content of a prescription should include the name and address of the prescriber and other legal requirement such as a registration number. This is often pre-printed on the form. Accordingly, if there are any questions about the prescription, the pharmacist can simply contact the prescriber. In several countries, the prescription has no limit time for validity, although in other countries dispensers do not provide drugs for prescriptions older than three months, and in some situations six months is the maximum. Also, the prescription form's design and the period of validity may vary between countries [9,10]. For controlled drugs and narcotics, prescriptions need to be signed and dated by the prescriber, specifying his/her address. Some countries require prescriptions for opiates on a separate sheet, and hospitals often have their own standard prescription forms [11]. Furthermore, two key points must be considered during the prescribing of a drug: the drug's name and dosage (strength).

Drug Name

R/ (not Rx) is derived from Recipe (Latin for 'take'). After R/, one should write the name of the drug and the dosage (strength). Each medicine has an approved name called the generic name. However, a group of medicines that have similar actions often have similar-sounding generic names. It is strongly recommended that the generic drug (non-proprietary) name be used, as certain brands may be unnecessarily expensive for the patient because they are therapeutically and biochemically equivalent. If there is a specific reason to prescribe a special brand, the brand (trade) name can be added [12]. Also, many drugs have one or more brand names. This is selected by the company which manufactured the drug. Several companies may make the same generic medicine, each with its own brand name. However, some countries allow generic drug substitutions by the pharmacist and ask for the addition of 'Dispense as written' if that brand and no other is to be dispensed [9].

Drug Dosage

The dosage of the drug shows how many milligrams each tablet or millilitre of fluid should contain (such as: g for gram, ml for millilitre) [10]. Moreover, the prescriber should try to avoid decimals and, when necessary, he/she should write the words in full to avoid confusion. Instructions for use must be clear and mention the maximum daily dose. Inaccuracy in writing and poor handwriting legibility can lead to misinterpretation by health care staffs, and it is the legal duty of the doctor to write legibly [13]. As to dosage form and total amount, the prescriber needs to only use standard abbreviations that will be known to the pharmacist. The number of drugs per prescription may be restricted or vary between countries. In prescriptions for controlled drugs or those with high risk for abuse, it is better to write the dosage and total amount in words to avoid alterations or enhanced prescription requirements. It safer to write the prescription in indelible ink (or printed) [11].

After Prescribing

A World Health Organization analysis of 1533 (=100%) drug package labels showed: no label or illegible: 1%, quantity not recorded: 50%, no directions or only 'as before/as directed': 26% and no date: 14%. [12]. Therefore, some points must be considered after prescribing a drug, such as:

- Prescriber's initials or signature and
- Patient's details, including name, age, address and health insurance (if needed) [10].

Information for the Package Label

S stands for Signa (Latin for 'write'). The dispenser must copy all information following the S or the word 'Label' onto the package label. This information contains the amount and the frequency of the taken drug, as well, any specific instructions and warnings. These information and instructions need to be in lay language. The brands name is often written most clearly on any packaging. However, the generic name often is written somewhere on the packet. It is recommended that abbreviations or statements such as 'as before' or 'as described' not be used. Moreover, when the prescriber writes 'as required', the maximum dose and minimum dose period should be specified.

References

1. Leathard HL (2001) Understanding medicines: extending pharmacology education for dependent and independent prescribing (Part II). Nurse education today 21: 272-277.
2. Aronson JK (2006) A prescription for better prescribing. British Journal of Clinical Pharmacology 61: 487-491.
3. Scordo KA (2014) Teaching students about the WHO Guide to Good Prescribing. The Nurse practitioner 39: 51-54.

4. Boreham NC, Mawer GE, Foster RW (2000) Medical students' errors in pharmacotherapeutics. Medical education 34: 188-193.

5. Grahame-Smith DG AJ (2002) The Oxford Textbook of Clinical Pharmacology and Drug Therapy. Oxford University Press in Oxford UK.

6. Maxwell S, Walley T (2003) Teaching safe and effective prescribing in UK medical schools: a core curriculum for tomorrow's doctors. Br J Clin Pharmacol 55: 496-503.

7. Heuberger R (2012) Polypharmacy and food-drug interactions among older persons: a review. Journal of nutrition in gerontology and geriatrics 31: 325-403.

8. Rambhade S, Chakarborty A, Shrivastava A, Patil UK, Rambhade A (2012) A Survey on Polypharmacy and Use of Inappropriate Medications. Toxicology International 19: 68-73.

9. Aronson JK (2006) A prescription for better prescribing. British Journal of Clinical Pharmacology 61: 487-91.

10. De Vries TPGM, Henning RH, Hogerzeil HV, Fresle DA (1994) Guide to good prescribing: a practical manual. World Health Organization in Geneva, Switzerland.

11. Gabay M (2013) Federal Controlled Substances Act: Controlled Substances Prescriptions. Hospital Pharmacy 48: 644-645.

12. WHO (2001) Drug Information 5: 3-4.

13. Velo GP, Minuz P (2009) Medication errors: prescribing faults and prescription errors. British Journal of Clinical Pharmacology 67: 624-628.