Prescribing knowledge of the intern doctors in India

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Abstract

INTRODUCTION

Poor prescribing is not uncommon in India. Various drug categories like antibiotics and NSAIDS are prescribed without thinking much about resistance and adverse drug reactions. Prescription errors are very common, specially with fresh doctors. The basic problem which contributes to the irrational prescribing is the medical students are not adequately instructed[1]. Teaching of pharmacology in medical colleges doesn't take much care of prescription writing. In India medical student start writing prescription during internship. Mostly there prescriptions are not supervised and they are often left to fend for themselves during their training[2].Thus, those who are less knowledgeable in rational prescribing continue to make medication errors. Because of this, risk of adverse drug reactions and polypharmacy is increased. Young doctors, therefore, need a firm grounding in the principles of rational prescribing.

This study, therefore, aims at assessing the knowledge of intern doctors in the govt. medical college, new civil hospital, Surat, India, on the principles of good prescribing.

MATERIALS AND METHODS

Govt. medical college and new civil hospital, Surat is tertiary health center in Gujarat state of India. This institute teaches undergraduate as well as post graduate students. Each year 150 students get admission in undergraduate MBBS course. Students that took part in this study were intern doctors from this college. 100 consented to participate in the study. They were interviewed with a structured questionnaire, which was filled on the spot. The questionnaire assessed the knowledge of the students on principles of good prescribing.

QUESTIONNAIRE FOR ASSESSING THE KNOWLEDGE OF INTERNS REGARDING GOOD PRESCRIBING HABITS

Figure 2

Table 1: Knowledge of interns regarding good prescribing habits

1. What are the components of rational prescribing?
2. What is the basis of rational medicine prescribing?
3. Whether the benefit

4. What are the factors which affects the benefit: risk ratio?
5. How will you define evidence based medicine?
6. What are the sources of evidence based medicine?
7. Write the prescription for a child suffering from bacillary dysentery.
8. Write the prescription for a child suffering from upper respiratory tract infections.
9. What will be your criteria for deciding the dose of pediatric population?
10. What is the unit of syrup dose?
11. What will be your criteria for prescription of tablet?
12. What are the conditions where dose of drug need to be modified?
13. What are the indications of giving the drug through injectable route?

RESULTS

{image:2}

The 100 medical students who took part gave a response rate of 91.89%. Their mean age was 23.08± 2.21 years, with male: female ratio being 0.52: 1. Most of the students were able to identify the components of rational prescribing. Ninety one (91.18%) students knew that rational prescribing involved prescribing the correct dosage of an appropriate medicine formulation; sixty eight (67.65%) knew that rational prescribing involved prescribing the appropriate medicine, specifying correct frequency of medication administration, and specifying the correct length of time of the medication prescribed. A reasonable number of the students knew the basis of rational medicine prescribing. Eighty five (85.29%) based rational prescribing on the knowledge of pharmacology; seventy one (70.59%) based it

on a sound knowledge and understanding of the pathophysiology of the disease to be treated; sixty eight (67.65%) based it on the knowledge of the risks associated with the medicine; and, sixty two (61.77%) based it on the knowledge of the benefits of the medicine. A majority of the students (97.06%) believed the potential benefit: risk ratio of a medicine should be determined, before it was prescribed. Many students (79.41%) believed that the benefit: risk ratio could be increased by a highly effective medicine with negligible adverse drug reactions and if such medicine was the only one available for use. Similarly, safety of alternative medicine (70.59%) to the prescribed medicine, efficacy of the alternative medicine (64.71%), seriousness of the problem to be treated (58.82%), and seriousness and frequency of possible adverse drug reactions of the medicine of choice (58.82%) were other factors considered by the students, to influence the benefit: risk ratio of a medicine. Only forty seven (47.06%) believed that life threatening diseases could enhance benefit: risk ratio of a medicine. All the students were able to define evidence-based medicine as the practice of medicine that based clinical decision to treat a patient on the best scientific evidence at the time of treating a disease. Eighty (79.41%) students correctly identified systematic review of clinical trials, intellectual searching and analysis of both published and unpublished data that are made available in databases as the source of evidence-based medicine. Other sources identified were clinical meetings and presentations (67.65%), review articles (64.71%), and talking to doctors or listening to their lectures (47.06%). The students would prescribe oral rehydration solution 79 (79.41%), antibiotics 68 (67.65%), multivitamins 47 (47.06%),ascorbic acid 44 (44.12%), blood tonic 21 (20.59%), antimalarials 18 (17.65%) and antidiarrheal medicine 18 (17.65%) to a child with bacillary dysentery and upper respiratory tract infections.82 (82.35%) students agreed to paediatric prescription in dosage per weight; 71 (70.59%) agreed to dosages based on a child's age; and 44 (44.12%) students respectively agreed to dosages in children based on their body surface area and the affordability of the medicine. Only 9 (8.82%) agreed to paediatric medicine prescription based on their height. 58.82 (58.82%) students agreed to syrup prescription in children in milligram (mg) per body weight, 47(47.06%) agreed to syrup prescription in millilitres (ml), 41(41.18%) agreed to tablet prescription to older children in mg per body weight, and, 6 (5.88%) agreed to tablet prescription in a unit number per dose. 79 (79.41%) students believed that medicine dosages should be modified in some disease conditions. Only one student believed that dosage modification was unnecessary. 82 (82.35%) students would prescribe antibiotics, if indicated, for a minimum of five days. The students would prescribe injections when a patient was unconscious (70, 70.59%), vomiting (67, 67.65%), having diarrhoea (47, 47.06%); on request by the patient (45, 44.12%), and having poor appetite (41, 41.18%), fever (38, 38.24%) and lethargy (38, 38.24%).

DISCUSSION

The results of this study show that knowledge of good prescribing by the interns is deficient. A majority of the students were able to correctly define rational prescribing.[3] Principles of good prescribing are based on sound knowledge and understanding of the pathophysiology of the disease to be treated, and the knowledge of risks and benefits of the medicine.[3] These principles were well identified by most of the students. Life threatening diseases have been reported as some of the conditions that could enhance benefit: risk ratio of a medicine.[3] unfortunately, only 47.06% students were able to identify this. Rational prescribing can be achieved by practicing evidence-based medicine. Even though this is not fully practiced in India, the awareness of 79.41% students that evidence-based medicine can be obtained from systematic review of clinical trials, intellectual searching, and analysis of both published and unpublished data that are made available in databases is an encouragement that rational prescribing is achievable in India. Parental influence on doctors to prescribe medicines, even when not necessary, has been reported in the UK and this is not uncommon in India.[4] Ranking prescription based on parental influence and brand names as low, by 73.53% students, is a good sign and supports the possibility of achieving rational prescribing.

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