



KNOWLEDGE, ATTITUDE AND PRACTICE OF RATIONAL PHARMACOTHERAPY IN SECOND YEAR MEDICAL STUDENTS: A QUESTIONNAIRE BASED STUDY

Pharmacology

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ABSTRACT

Background: This study is done to assess the knowledge, attitude and practice of Rational Pharmacotherapy (RPT) in medical students who have completed one year of clinical duties and studying Pharmacology.

Methods: 102 second MBBS students were given a 12point questionnaire about RPT. Result was expressed in percentage.

Results: The knowledge of RPT and the concept of "P drug" is present in about 90% of them. But in actual practice, only about 46% have the concept to properly follow the steps for selection of a rational drug for a disease condition. Around 84% understand the reasons for irrational drug use. Majority of them understand the difference between "P treatment" and "P drug".

Conclusion: Though the knowledge of second year medical students regarding RPT is good, its practice needs improvement.

KEYWORDS

WHO, P drug, P treatment, Rational Pharmacotherapy.

INTRODUCTION:

According to WHO, Rational Pharmacotherapy (RPT) requires that patients receive medications appropriate to their clinical needs, in doses that meet their own requirements, for an adequate period of time, and at the lowest cost to them and their community.¹ Irrational or non-rational use is the use of medicines in a way that is not compliant with rational use as defined above. Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly.^{2,3}

During undergraduate course, medical students are trained in Pharmacology in II year of MBBS curriculum. Knowledge of Pharmacology is essential for safe and effective practice of medicine. It also forms the basis of RPT practice. The systematic application of Pharmacology in patients' care forms an essential component of RPT. It facilitates the medical students to develop a methodical approach in solving patients' clinical problems.⁴

Knowledge is to acquire, retain and use information for skill. Attitude is to react and interpret events. Good practice is progress of knowledge and technology executed in an ethical manner.⁵ Since the clinical duties start from second year MBBS curriculum, along with Pharmacology as a subject, the knowledge of RPT is considered mandatory for these students. So, this questionnaire based study was done to assess the knowledge, attitude and practice of Rational Pharmacotherapy in students who have completed almost one year of clinical duties as well as studying Pharmacology. Confidentiality of the participating students and batch is maintained.

MATERIAL AND METHODS^{4,6}:

This study was conducted in a municipality run medical college in Mumbai. Medical students who have started clinical duties and have studied Pharmacology for one year were recruited after getting verbal informed consent explaining the intention of the study.

Sample size: It consisted of 102 subjects.

Inclusion criteria: Medical students towards completion of second year with willingness to participate.

Exclusion criteria: Fresh medical students.

A validated questionnaire containing 12 questions was made to assess the knowledge, overall attitude and practice of the students towards RPT. It was given to each student and they were asked to mark the suitable option. Students were instructed not to reveal their identity in the questionnaire. Thirty minutes time was allotted for answering the questions. The questionnaire was based on WHO guidelines^{2,7} and according to the previous studies undertaken on RPT. It was suitably modified for second MBBS students. Completed questionnaire was collected and data was analysed.

The Questionnaire on Rational Pharmacotherapy for IInd MBBS students was-

Mark the most appropriate answer in MCQs-

- What do you understand by Rational Pharmacotherapy?
 - Patients receive appropriate medication in appropriate doses for some fixed time period.
 - Patients receive appropriate medication in appropriate doses for an adequate time period.
 - Patients receive appropriate medication in appropriate doses for an adequate time period at the lowest cost.
 - Patients receive over the counter medication in appropriate doses for an adequate time period at the lowest cost.
- What do you mean by a "P" drug?
 - Purified drug
 - Personal drug
 - Potentiating drug
 - Prophylactic drug
- What is the criteria for selection of a "P" drug?
 - Safety, Tolerability, Efficacy, Potency
 - Safety, Treatability, Efficacy, Potency
 - Safety, Tolerability, Efficacy, Price
 - Selectivity, Tolerability, Efficacy, Potency
- The first step for selection of a rational drug for a disease condition is-
 - To make a list of effective drug groups
 - To define the patient's problem
 - Using STEP criteria, to select a P drug from the effective group
 - To write a prescription
- Which of these statements is FALSE about a "P drug"?
 - "P" in "P drug" stands for Personal drugs
 - P drug differs from country to country
 - P drug enables us to avoid repeated searches for a good drug
 - P drug for a specific disease condition is same for all doctors
- Which of these drug related points should be followed while selecting a P drug?
 - Choosing an active substance and dosage form
 - Choosing a standard dosage schedule
 - Choosing a standard duration of treatment
 - All of these
- Which of these are the common reasons for irrational use of medicines?
 - Polypharmacy
 - Use of antibacterial drugs for non-bacterial infections
 - Inappropriate self-medication
 - All of these
- Are "P drug" and "P treatment" same? **Yes/No**
- "P treatment" consists of drug as well as non-drug therapy also.

True/False

10. Selecting a “P drug” is NOT a part of “P treatment”. **True/False**
11. ORS is the “P treatment” for a case of acute watery diarrhoea with mild dehydration in a child. **True/False**
12. ORS is the “P drug” for a case of acute watery diarrhoea with mild dehydration in a child. **True/False**

RESULTS:

A total of 102 students participated in the study and all of them completed the questionnaire. Analysis was based on the percentage wise distribution of the parameters used in the questionnaire.

- According to this study, 93.1% of students correctly understood that according to RPT, patients receive appropriate medication in appropriate doses for an adequate time period at the lowest cost. 6% did not know the significance of cost, while 0.9% of them did not consider adequate duration of therapy to be important. Nobody opted option “d”.
- 90.2% of them considered “P” drug as Personal drug, while 6.9% thought it as Prophylactic drug, 2% Purified and other 0.9% Potentiating drug.
- 84.3% correctly knew that the criteria for selection of a “P” drug is 'Safety, Tolerability, Efficacy, Price'. 6.9% of them confused 'Price' with 'Potency', 4.9% 'Tolerability' with 'Treatability' and 3.9% 'Safety' with 'Selectivity'.
- According to only 46.1% students, first step for selection of a rational drug for a disease condition is to define the patient's problem. 51.9% answered wrongly that it should be using STEP criteria, to select a P drug from the effective group. 2% went with option “a” and none of them opted “d”.
- 79.5% students correctly selected the false statement about “P” drug that for a specific disease condition it is same for all doctors. 8.8% chose option “b”, 8.8% option “c” and 2.9% option “a”.
- 93.2% were correct that choosing an active substance and dosage form, a standard dosage schedule and a standard duration of treatment, all these drug related points should be followed while selecting a P drug. 3.9% went only with “a”, 2.9% with “b” and none with “c”.
- The common reasons for irrational use of medicines, according to 84.3% of them was polypharmacy, use of antibacterial drugs for non-bacterial infections and inappropriate self-medication. 10.7% opined only for polypharmacy while 5% were in favour only of inappropriate self-medication.
- 91.1% said that “P drug” and “P treatment” are not same, 8.9% were thinking opposite to this.
- 93.1% correctly opted that “P treatment” consists of drug as well as non-drug therapy. Rest 6.9% were in wrong opinion.
- 88.2% said that selecting a “P drug” is a part of “P treatment”, while 11.8% did not think so.
- 92.1% think that ORS is the “P drug” for a case of acute watery diarrhoea with mild dehydration in a child, while 7.9% consider it as “P treatment”.

DISCUSSION:

According to WHO, the P (Personal) drug concept is more than just the name of a pharmacological substance, it also includes the dosage form, dosage schedule and duration of treatment. P drugs will differ from country to country, and between doctors, because of varying availability and cost of drugs, different national formularies and essential drugs lists, medical culture, and individual interpretation of information. However, the principle is universally valid. P drugs enable us to avoid repeated searches for a good drug in daily practice. While selecting a P drug for a specific disease, the criteria of efficacy, safety, suitability and cost should be used when comparing treatment alternatives. P treatment for a specific condition can consist of advice and information, nondrug therapy, drug treatments, referral for treatment, or combinations of these.

Poly pharmacy, inappropriate use of antimicrobials, often in inadequate dosage, for non-bacterial infections, overuse of injections when oral formulations would be more appropriate, failure to prescribe in accordance with clinical guidelines, inappropriate self-medication, often of prescription only medicines etc. are the various reasons behind irrational use of medicines.^{2,8}

As found in this study, the knowledge of RPT and the concept of “P drug” is there in about 90% of the students. But in actual practice, only about 46% of them have the concept to properly follow the steps for selection of a rational drug for a disease condition. Around 84% of them understand the causes for irrational use of drugs. Majority of them understand the difference between “P treatment” and “P drug”. So, according to the study, the knowledge of the second year MBBS students towards RPT is reasonably good, but the attitude and practice needs to be improved. As per our view, a refresher course in RPT should be included in the curriculum before starting independent clinical practice or during internship. Some studies have mentioned about the inability of doctors in writing rational prescription and it is suggested that there should be incorporation of some training of Clinical Pharmacology in the internship.⁹

CONCLUSION:

The study revealed that, though the knowledge of the medical students regarding RPT is good, its practice needs improvement, which may take place as and when they get involved more and more in clinical practice during their MBBS curriculum. However, a refresher course in Rational Pharmacology should be included in the curriculum during internship to prepare them for their transition towards practical patient care and to improve the quality and safety of health care.

REFERENCES:

- Gelal A, Gumustekin M, Arici MA, Gidener S. Rational pharmacotherapy training for fourth-year medical students. *Indian J Pharmacol*. 2013;45:4-8.
- WHO Policy Perspectives on Medicines -Promoting rational use of medicines: core component. Sept 2002, 005. Available on www.who.int/medicinedocs.
- Ambwani S, Mathur AK. Rational Drug Use. *Health Administrator*. 2006; 19(1): 5-7.
- Krishnaiah V, Ramaiah V, Ramakrishna R. Comparison of rational pharmacotherapy approach by medical students with and without Guide to Good prescribing guidelines. *Natl J Physiol Pharm Pharmacol*. 2013; 3(1):53-56.
- Kaliyaperumal K. Guideline for Conducting a Knowledge, Attitude and Practice (KAP) Study. *Community Ophthalmology*. 2004; 4:7-9.
- Rashmi A, Pawar S. Attitude, Perception and Feedback of Second Year Medical Students About Their Interest in Pharmacology: A Questionnaire-Based Study. *International Journal of Scientific Research*. 2016; 5(8): 31-33.
- Guide to Good Prescribing: A Practical Manual. World Health Organization. Available on apps.who.int/medicinedocs.
- Bello SI, Ojieabu WA, Bello IK. World Health Organization Indicators for Rational Use of Drugs in a Nigerian Secondary Hospital. *RGUHS J Pharm Sci*. Apr-Jun, 2016; 6(2): 38-47.
- Han WH, Maxwell SR. Are medical students adequately trained to prescribe at the point of graduation? Views of first year foundation doctors. *Scott Med J*. 2006; 51: