



Impact of Clinical Posting in MBBS Pharmacology Syllabus on Learning Rational Therapy: a Study From a Medical College of West Bengal

KEYWORDS

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ABSTRACT

The primary objective of teaching pharmacology is to enable undergraduate medical students to take rational therapeutic decisions in clinical practice. However, this objective is not adequately met by current curriculum. Department of Pharmacology of College of Medicine & JNM hospital, Kalyani has started mandatory clinical posting of all 5th semester students. This study was done to know whether it was fruitful.

To carry out the study, faculties of Department of Pharmacology of the College developed a set of questionnaire comprised of 10 questions, covering important clinical areas. Students were asked to answer those before starting and at the end of clinical posting. The marks were compared.

There was increment of 2.06 in the average score (out of 10) of the 83 students. Wilcoxon's signed rank test was done to compare the matched pair and p value obtained was 0.0001.

Clinical posting during 5th semester of MBBS significantly helped to grow the clinical knowledge of those students. Multicentric studies are needed to prove the effectiveness of clinical posting for bringing out this much needed change in pharmacology syllabus of MBBS.

Introduction

Pharmacology being both a basic and applied science forms the backbone of rational therapeutics. The primary objective of teaching pharmacology is to enable undergraduate medical students to take rational therapeutic decisions in clinical practice. However, this objective is not adequately met by the prevailing curricula.¹ The subject is taught with high factual information rather than therapeutic skills. The clinical postings of undergraduates emphasize on teaching diagnosis of the diseases. The skills required for therapeutic reasoning and prescribing are not addressed and taught in a structured way.^{2,3} On the other hand, interns are expected to prescribe drugs from the first day of clinical work and may not feel confident when confronted to take decisions independently.

Thus, there is an imperative need to implement radical changes in the teaching curricula of pharmacology which should be in consonance with patient care for the doctors of tomorrow to render better health service.⁴ Keeping that view in mind, Department of Pharmacology of College of Medicine & JNM hospital, Kalyani has started mandatory clinical posting of all 5th semester students for 8-9 days during which they are taught about rational therapeutics in indoor and outdoor patients. Now it is important to know whether this clinical posting was fruitful for the students or not. This can be done by evaluating any improvement of the knowledge about rational therapy after the clinical posting of the students. This study showed how the knowledge about rational therapy of different important diseases among MBBS students of 5th semester is improved after the clinical posting, i.e., it showed whether this clinical

posting of pharmacology will enhance their understanding of the rational therapy and thus, can be helpful to grow interest in the subject.

Materials and methods-

It was an observational longitudinal study to evaluate impact of clinical posting in pharmacology curriculum of MBBS students. To carry out the study, faculties of Department of Pharmacology of College of Medicine & JNM hospital, Kalyani developed a set of questionnaire comprised of 10 questions, covering important clinical areas and common diseases. It had both multiple choice questions and short answer type questions. Each question carried one mark. Students were asked to answer the questions on day 1 of their clinical posting, (pre test) before going to ward. After 8-9 days of ward, where teachers of department of pharmacology discussed prescriptions of different outpatients and inpatients in the hospital along with criticism of those prescription and justification of prescribing different medicines, they were asked to answer the same questions on the last day of clinical posting (post-test). Students were not allowed to take or copy the pre test questions.

Out of 100 students in 5th semester MBBS batch of 2015-16, 83 students completed the study. Students who did not give either pre-test or post-test or both were excluded from the study. Marks were given for both the pre test and post test for all students. Thus two sets of marks were obtained for 83 students, for pre test and post test. Wilcoxon's signed rank test was done to evaluate whether the pretest marks and post test marks had significant difference or not.

SPSS version 22 was used for statistics, for comparison of mean, evaluation of normality of the data and the non parametric test for paired group.

Results

Out of 83 students of 5th semester batch, 38 were female and 45 were male students. The mean score, standard deviation and standard error of mean for pre test and post test marks were evaluated, as shown in table 1.

	Pre test marks (out of 10)	Post test marks (out of 10)
Mean	4.73	6.79
Standard deviation	1.77	2.09
Standard error of mean	0.19	0.23

Table 1: comparison of means and standard deviation of pre test and post test marks

A newly married woman is diagnosed to have hypertension. What will be your choice? Enalapril B)Losartan C)Metoprolol
A diabetic patient without hypertension, is having microalbuminuria. How will you treat? A)Protein restricted diet B) Telmisartan C) No treatment
What analgesic will you give in a case of snake bite? Nimesulide B)Ibuprofen C)Tramadol
A 40 year old asthma patient is diagnosed to have angina pectoris. Which antiplatelet should be given? A) aspirin 75 mg B)aspirin 325 mg C) clopidogrel 75 mg D)aspirin 75 mg+ clopidogrel 75 mg
5. Mention 2 clinical conditions, where providing any kind of IV fluid is harmful to the patient.
6. A patient with benign prostatic hyperplasia (BPH) was prescribed prazosin. Next morning he fainted. Probable cause?
7. A 20 year old patient was receiving ceftriaxone IV for skin infection. Culture report revealed infection with MRSA. Next step? A) continue ceftriaxone, B) change antibiotic
8. A 70 year old male was receiving Multivitamin for long time, now suffering from parkinsons disease was started with levodopa. Should he continue multivitamin?
9. A patient with deep vein thrombosis was receiving warfarin. Oneday he took aspirin for headache. Then he had an episode of epistaxis. What may be the cause?
10. A 45 year old female patient with gastric ulcer and hypothyroidism was prescribed levothyroxine and pantoprazole in morning. Which drug she should take earlier?

Table 2: questionnaire for pre test and post test

Discussion

Since Medical Council Of India has not advised the clinical posting in Pharmacology curriculum in MBBS as mandatory, most of the institutions do not make any provision for clinical posting. Our study aimed to show whether such posting would increase their practical knowledge about rational therapy.

From the study, it is evident that the students performance were improved significantly after visiting patients and their prescriptions during their clinical posting where case discussions were done in presence of a faculty of Department of Pharmacology. The students who attended the clinical classes regularly fared much better than those who were irregular. important clinical scenario like antihypertensive use during child bearing age, use of antiplatelets in asthma, use of analgesic after snake bite, importance of skin test before using antibiotics were covered in the questionnaire.

Every student agreed that such posting was very helpful for enhancing the practical knowledge of pharmacology as in the current syllabus, they have little scope for applying

Average increase in score was 2.06.

Since the data set of post test marks did not pass the test of normality, Wilcoxon's signed rank test was performed to evaluate difference between these paired data. Sum of all signed ranks (W) was -3160.0. Sum of positive ranks (T+) = 0.000 and Sum of negative ranks (T-) = -3160.0

The two-tailed P value is < 0.0001, considered extremely significant.

Number of pairs was 79. Total 4 pairs were excluded from calculations because both values were equal. Nonparametric Spearman correlation coefficient (r) = 0.7636, which shows that the pairing (or matching) appears to be effective.

their theoretical knowledge of pharmacology, taught during 3rd, 4th and 5th semester.

After the clinical posting, students were able to identify the irrational prescriptions and also justification of giving particular drugs in a given scenario. So from the study result, it is evident that such clinical posting are highly effective during 5th semester MBBS where the students have learnt the detail theory about most of the drugs they need to know for 2nd professional MBBS examination as it provides a platform for applying their knowledge into clinical conditions.

In current scenario, interns are expected to write correct prescription from day 1 of posting without practical knowledge about rational therapy as they have passed pharmacology 2 years ago. So if such clinical posting is ensured at the time when they are learning about the drugs, it would be really effective for them. This corroborates with studies done in other countries where context learning has been found to be more successful and effective than sequential learning where in learning and applications of knowledge are separated.⁵

Large scale multicentric study should be performed to evaluate effectiveness of clinical posting in pharmacology curriculum for motivating Medical council of India to make this posting a mandatory part in MBBS pharmacology syllabus.

Conclusions

Primary objective of teaching pharmacology is to enable undergraduate medical students to take rational therapeutic decisions in clinical practice. The skills required for therapeutic reasoning and prescribing are not addressed and taught in a structured way in present syllabus. Clinical posting during 5th semester of MBBS significantly helped to grow the clinical knowledge of those students. Applying their theoretical knowledge into clinical scenario at the time of learning the drugs would be better for their future applications. Large scale studies are needed to prove the effectiveness of clinical posting for bringing out this much needed change in pharmacology syllabus of MBBS.

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