

Original Research

Assessment of knowledge of nonemergency and emergency conditions among medical undergraduates

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ABSTRACT:

Background: Medical students should be effectively trained to handle medical emergencies. The present study was conducted to assess knowledge of nonemergency and emergency conditions among medical undergraduates. **Materials & Methods:** 110 second year medical students of both genders were enrolled. The questionnaire was designed to assess the current level of knowledge of PT acquired by the second MBBS students. A questionnaire comprising of MCQs related with emergency conditions and asked to respond. For all conditions, correct responses were graded as poor, average and good, respectively. **Results:** Out of 110 subjects, males were 45 and females were 65. Correct response of question first-line drug for status epilepticus is diazepam by 64%, life-saving drug in anaphylactic shock is epinephrine by 55%, drugs can be used safely in hyperemesis gravidarum except Ondansetron by 72%, dose of atropine to reverse muscarinic effects in organophosphorous poisoning is 2mg/10 min intravenous by 61%, drug useful in relieving acute angina is isosorbide dinitrate by 52%, drugs currently used in hypertensive emergency except nifedipine by 48%, insulin preparation used to treat diabetic ketoacidosis is regular insulin by 37%, parenteral fluid used to correct dehydration in severe diarrhea is ringer lactate by 28%, first-line drug for enteric fever is ofloxacin by 75%, most common side effect of nonselective cyclo-oxygenase inhibitors is gastritis by 64%, first-line drug in early type 2 diabetes is Metformin by 83%, drug of choice for noncomplicated non-resistant malaria is chloroquine by 66% and drug of choice for pseudomembranous colitis is metronidazole by 71%. **Conclusion:** Second year medical students had insufficient knowledge about emergency and non-emergency medical conditions.

Key words: Emergency medical conditions, knowledge, MBBS students

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INTRODUCTION

Pharmacotherapeutics (PT) is the application of pharmacological information together with the knowledge of the disease for its prevention, mitigation or cure. Selection of the most appropriate drug, dosage and duration of treatment taking into account the specific features of a patient are a part of PT. Knowledge of PT is essential to practice medicine.¹

Medical students should be effectively trained to handle medical emergencies. It is necessary to improve the quality of training in medical emergencies so as to enhance students' ability to diagnose and deal with medical emergency cases in a professional manner.² While medical emergencies are wide in range, severe asthmatic attack, acute

hypoglycemia, anaphylactic attack, and epilepsy attack are examples of the medical emergencies that could be encountered in daily life.³

PT knowledge is a prerequisite for rational prescribing and prepares the medical undergraduates to be efficient doctors (though knowledge of prescription writing is also acquired during clinical training but is based on initial PT knowledge imparted in pharmacology during second professional year training).⁴ In some countries it is a precondition for healthcare professionals to attend a training course and pass an assessment exam in cardiopulmonary resuscitation to obtain a work license. Such a measure is a sign of good practice. It comes under the welfare of patients and clinicians, as it saves patients' lives and protects health

professionals from litigation.⁵The present study was conducted to assess knowledge of nonemergency and emergency conditions among medical undergraduates.

MATERIALS & METHODS

The present study comprised of 110 second year medical students of both genders. The consent was obtained from all.

Data such as name, age, gender etc. was recorded. The questionnaire was designed to assess the current

level of knowledge of PT acquired by the second MBBS students. A questionnaire comprising of MCQs related with emergency conditions like status epilepticus, anaphylactic shock, severe dehydration, diabetic ketoacidosis, etc. were distributed and asked to respond. For all conditions, correct responses were graded as poor, average and good, respectively. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 110		
Gender	Males	Females
Number	45	65

Table I shows that out of 110 subjects, males were 45 and females were 65.

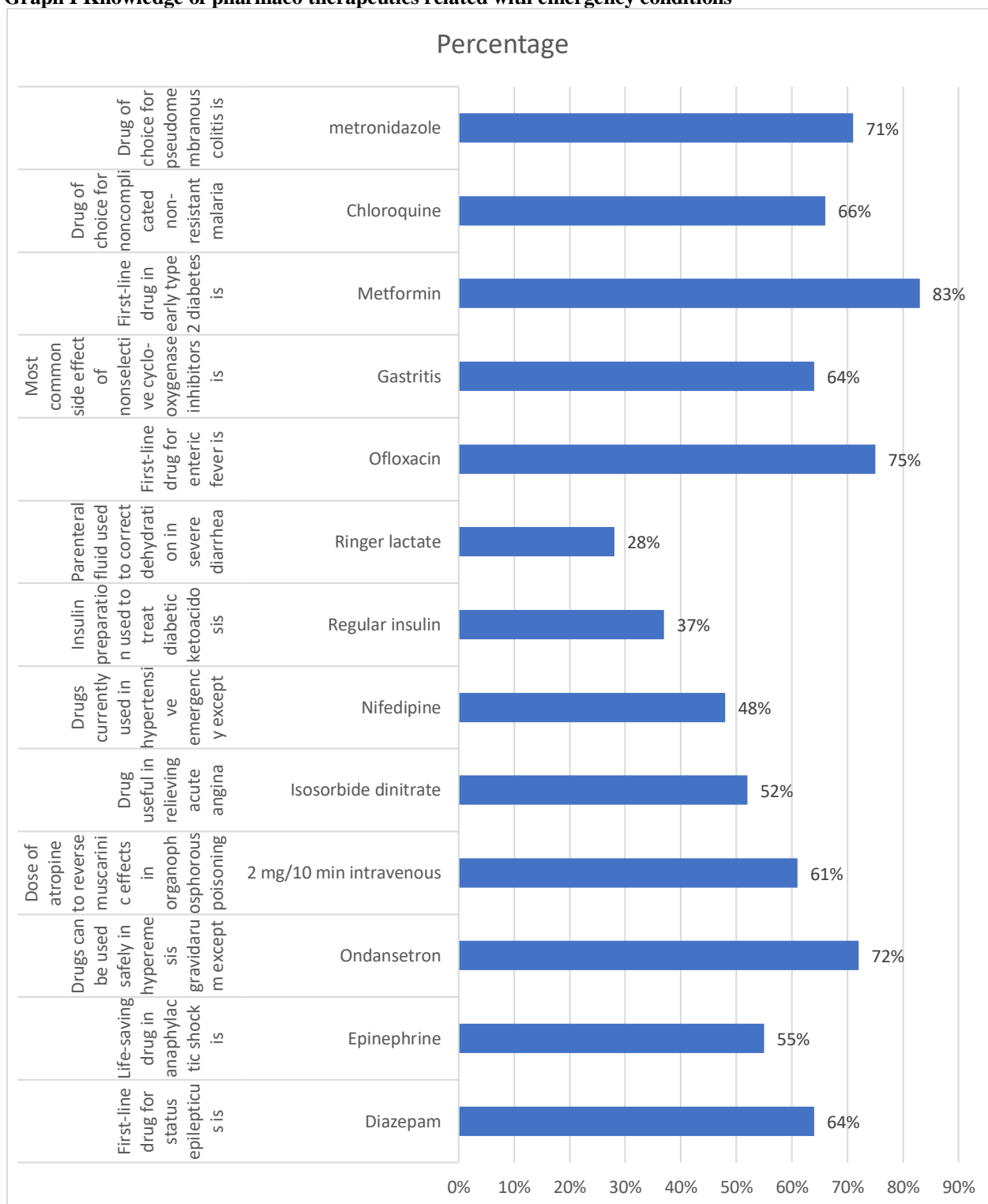
Table II Knowledge of pharmacotherapeutics related with emergency conditions

Questionnaire	Correct response	Percentage	P value
First-line drug for status epilepticus is	Diazepam	64%	0.04
Life-saving drug in anaphylactic shock is	Epinephrine	55%	
Drugs can be used safely in hyperemesis gravidarum except	Ondansetron	72%	
Dose of atropine to reverse muscarinic effects in organophosphorous poisoning	2 mg/10 min intravenous	61%	
Drug useful in relieving acute angina	Isosorbide dinitrate	52%	
Drugs currently used in hypertensive emergency except	Nifedipine	48%	
Insulin preparation used to treat diabetic ketoacidosis	Regular insulin	37%	
Parenteral fluid used to correct dehydration in severe diarrhea	Ringer lactate	28%	
First-line drug for enteric fever is	Ofloxacin	75%	
Most common side effect of nonselective cyclo-oxygenase inhibitors is	Gastritis	64%	
First-line drug in early type 2 diabetes is	Metformin	83%	
Drug of choice for noncomplicated non-resistant malaria	Chloroquine	66%	
Drug of choice for pseudomembranous colitis is	metronidazole	71%	

Table II, graph I shows that correct response of question first-line drug for status epilepticus is diazepam by 64%, life-saving drug in anaphylactic shock is Epinephrine by 55%, drugs can be used safely in hyperemesis gravidarum except Ondansetron by 72%, dose of atropine to reverse muscarinic effects in organophosphorous poisoning is 2mg/10 min intravenous by 61%, drug useful in relieving acute angina is isosorbide dinitrate by 52%, drugs currently used in hypertensive emergency except nifedipine by 48%, insulin preparation used

to treat diabetic ketoacidosis is regular insulin by 37%, parenteral fluid used to correct dehydration in severe diarrhea is ringer lactate by 28%, first-line drug for enteric fever is Ofloxacin by 75%, most common side effect of nonselective cyclo-oxygenase inhibitors is gastritis by 64%, first-line drug in early type 2 diabetes is Metformin by 83%, drug of choice for noncomplicated non-resistant malaria is chloroquine by 66% and drug of choice for pseudomembranous colitis is metronidazole by 71%.

Graph I Knowledge of pharmaco therapeutics related with emergency conditions



DISCUSSION

Doctors have been providing one of the greatest services to the mankind because of which they hold a high respect in the sight of people.⁶ Thus, responsibility of maintaining high quality and standard in providing health care also rests with the doctors themselves.⁷ Quality control is defined as “a procedure or set of procedures, intended to ensure that a manufactured product or performed service

adheres to a defined set of quality criteria or meets the requirements of the client or customer.”⁸ In medical education this task is taken care of by the Medical Council of India.⁹The present study was conducted to assess knowledge of nonemergency and emergency conditions among medical undergraduates.

We found that out of 110 subjects, males were 45 and females were 65.Khan et al¹⁰assessed

pharmacotherapeutics (PT) knowledge of second professional medical undergraduates. It was a questionnaire-based cross-sectional study. The questionnaire was designed to objectively assess the current level of knowledge of PT acquired by the second MBBS students in a medical college in India. Thirty Type-A multiple choice questions (MCQs) related with the PT of common and important medical conditions and some emergency conditions were administered to 125 participants. MCQs related with PT of nonemergency conditions were responded correctly by 9.8–77.7% of participants. MCQs related with PT of some emergency conditions were responded correctly by 17–66.1% of participants. No statistically significant association was observed in PT knowledge with respect to mode of admission.

We observed that correct response of question first-line drug for status epilepticus is diazepam by 64%, life-saving drug in anaphylactic shock is epinephrine by 55%, drugs can be used safely in hyperemesis gravidarum except Ondansetron by 72%, dose of atropine to reverse muscarinic effects in organophosphorous poisoning is 2mg/10 min intravenous by 61%, drug useful in relieving acute angina is isosorbide dinitrate by 52%. Lello et al¹¹ aimed to measure the level of medical-emergency-related knowledge among senior dental students and clinical trainers. Two hundred and seventy-five self-administered anonymous questionnaires on the management of common medical emergencies were distributed to all senior dental students and clinical trainers. There was a serious lack of knowledge regarding the management of medical emergency scenarios among the participants. Only 54% of participants knew the correct management for some frequent and life-threatening conditions such as “crushed chest pain”, and only 30–35% of participants knew the correct management of deeply sedated patients with benzodiazepine overdose and crisis of hypoadrenalism. Moderate-quality knowledge (50–74% of participants responded correctly) was noted for the following conditions: sudden onset of brain stroke, psychiatric patient, unconscious patient with hypoglycemia, patient with postural hypotension, and patient with hyperventilation. Based on the scale of knowledge, there were significant differences in the level of knowledge between clinical trainers, senior dental students, and junior dental students. Almost all students and 90% of trainers declared the need for further training

We found that drugs currently used in hypertensive emergency except nifedipine by 48%, insulin preparation used to treat diabetic ketoacidosis is regular insulin by 37%, parenteral fluid used to correct dehydration in severe diarrhea is ringer lactate by 28%, first-line drug for enteric fever is Ofloxacin by 75%, most common side effect of nonselective cyclo-oxygenase inhibitors is gastritis by 64%, first-line drug in early type 2 diabetes is Metformin by

83%, drug of choice for noncomplicated non-resistant malaria is chloroquine by 66% and drug of choice for pseudomembranous colitis is metronidazole by 71%. Al-Sebaei, et al¹² assessed the knowledge and declared skills of medical and non-medical students regarding the methods and techniques of first aid. The survey was addressed to 200 part-time students of medical (medical emergency, nursing, physiotherapy) and non-medical (finance and construction) degrees. There were statistically significant differences between the self-assessment of knowledge about first aid and the field of study ($p < 0.001$). The question “How do you evaluate your knowledge about first aid” by comparing the medical, financial and construction fields of study showed that a level assessed as very good was indicated by: 38% vs. 7% vs. 8% students, respectively. A good level was indicated by 51% vs. 37% vs. 24% of students respectively while an average level was shown by: 11% vs. 49% vs. 64% of students respectively. In addition, a lack of knowledge was displayed by: 0% vs. 7% vs. 4% of students, respectively

CONCLUSION

Authors found that second year medical students had insufficient knowledge about emergency and non-emergency medical conditions.

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