

A questionnaire based study to assess the interns' knowledge about the brand names of drugs routinely prescribed in a tertiary care hospital in Kerala, India

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Received: 12 August 2018

Accepted: 08 September 2018

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ABSTRACT

Background: The gap in the knowledge of interns between brand names, generic name and indication of a drug can lead to unwanted clinical consequences. This study was conducted to assess the knowledge of interns at a tertiary care hospital regarding the generic name and indications of the routinely prescribed brand names of drugs.

Methods: In this study, interns were required to write whether they prescribed the brand names mentioned in the questionnaire in the preceding six months, their generic name and the indication for their use. Results were expressed using descriptive statistics.

Results: All brands except Zovobact SB was prescribed by more than 50% of interns in the preceding six months. The generic equivalents were correctly identified by good percentage of interns for Hicet (100%), Asthalin (95%), Cifran (90%) but the percentage of correct answers was low for other brands. For combination brands, correct generic names of all components were identified by more than 50% of interns for oflox TZ (93%), Septid D (68%) and Losar H (68%). The percentage of correct response for the indication of the brands was satisfactory for Hicet (100%), Asthalin (98%), Cifran (98%), Zerodol P (100%), Cyclopam (100%), oflox TZ (100%), Losar H (98%), Septid D (98%) but was inadequate for Taxim O (48%), Betaloc (33%), Valium (23%), Diamox (0%), Quadriderm (31%) and Zovobact SB (31%).

Conclusions: This study identified lacunas in the knowledge of interns regarding generic equivalents and indications of brand names. Strategies to overcome the problem should be devised to ensure patient safety.

Keywords: Brand names, Interns, Gentamicin, Nephrotoxicity

INTRODUCTION

Each drug has a chemical name, an internationally agreed generic name and one or more brand names (trade names) based on the pharmaceutical company that markets it.¹⁰ The brand names are chosen to be memorable for advertising or to be easier to say or spell than the generic name.

When a drug is combined with other drugs (combination preparation), a further brand name is coined. The multitude of brand names used for a drug can create confusion to the clinical practitioners and it is more with combination products.

The confusion with the use of multiple names for a drug is more for intern doctors. This is because medical students are taught clinical pharmacology using generic names but prescribing in hospital often uses different brand names of the same drug.² Internship is the period when a medical graduate prescribes for the first time and the prescribing habits can be influenced by the mentors, seniors or drug promotions by pharmaceutical companies which may be having an abundance of brand name usage in contradiction to the generic names upon which their knowledge of drugs is based.^{3,4} As a result, the interns may end up prescribing brand names of drugs without actually knowing their generic equivalents or correct indication for use leading to unwanted clinical consequences. Hence, this study was

conducted in order to assess the knowledge of intern doctors at a tertiary care hospital regarding the generic name and indications for use of the brand names of drugs routinely prescribed at their centre.

METHODS

This cross-sectional questionnaire-based study was conducted at a tertiary care hospital in Kerala after getting ethical clearance from the Institutional Ethics committee.

Inclusion criteria

- Interns who were in the last month of their internship
- Willing to give written informed consent
- Interns, who come across most of the routinely prescribed brand names at the centre.

Exclusion criteria

- Interns who were not in the last month of their internship,
- Interns, who were not willing to give written informed consents.

All the participants enrolled in the study were asked to fill up a predesigned questionnaire (filled on spot) which was used to assess their knowledge about the commonly prescribed brand names in the hospital.

For preparing the questionnaire we identified 10 commonly prescribed brand names containing single drugs and 10 brands containing combination of drugs from the centre. The questionnaire required the participants to write whether they prescribed the particular brand in the preceding six months, its generic name and the indication for its use. The questionnaire is depicted in Appendix.

Statistical analysis

Descriptive statistics was used, and the data collected was expressed as percentage. All the data was analysed using the Microsoft Excel software.

RESULTS

Eighty interns who were in the last month of internship and who gave informed consent were included in the study. Authors assessed the percentage of the interns who had prescribed the brands included in the questionnaire during the preceding six months. In case of brands containing single drugs, more than 50% of the interns had prescribed each of the brands during the said period. Hicet (100%), Diamox (100%), Asthalin (100%), Cifran (100%) were the brands prescribed the most followed by Liponorm (98%), Lasix (93%), Daonil (79%), Valium (53%). Betaloc and taxim O were each prescribed by 51% of interns in the preceding six months (Table 1).

Table 1: Assessment of knowledge of generic names and indications for use of brand names containing single drug.

Brand name	Interns who have prescribed the brand name in the preceding six months		Interns who correctly wrote the generic name		Interns who correctly wrote the indication for use	
	Number	Percentage	Number	Percentage	Number	Percentage
Hicet	80	100	80	100	80	100
Valium	42	53	20	25	18	23
Liponorm	78	98	42	53	62	78
Diamox	80	100	0	0	0	0
Daonil	63	79	50	63	50	63
Lasix	74	93	42	53	42	53
Asthalin	80	100	76	95	78	98
Cifran	80	100	72	90	78	98
Betaloc	41	51	20	25	26	33
Taxim O	41	51	19	24	38	48

For brands containing combination drugs, more than 50% of interns had prescribed each of the brands except Zovobact SB which was prescribed by 43% of interns in the preceding six months. Zerodol P (100%), QuadriDerm (100%), Cyclopam (100%) and Oflox TZ (100%) topped the list followed by Septid D (98%), Augmentin (93%), Losar H (90%), Iripan DSR (85%) and Budamate (83%) (Table 2). When authors assessed the interns' knowledge regarding the generic name of each of the brand names, all

participants correctly wrote the generic name of Hicet (100%) as cetirizine 95% interns wrote the generic name of Asthalin correctly and 90% of interns wrote the generic name of Cifran correctly. More than 50% of interns wrote the generic names of Daonil (63%), Lasix (53%) and Liponorm (53%) correctly. The knowledge of generic names was inadequate for brands like Valium (25%), Betaloc (25%), Taxim O (24%) and Diamox (0%) (Table 1).

Table 2: Assessment of knowledge of generic names and indications for use of brand names containing combination drugs.

Brand name	Interns who have prescribed the brand name in the preceding six months		Interns who correctly wrote the generic name				Interns who correctly wrote the indication for use	
	Number	Percentage	Of all the components in the preparation		Of at least one component in the preparation		Number	Percentage
Zerodol P	80	100	34	43	80	100	80	100
Quadri Derm	80	100	02	03	23	29	25	31
Iripan DSR	68	85	12	15	56	70	68	85
Augmentin	74	93	10	13	23	29	72	90
Septid D	78	98	54	68	74	93	78	98
Zovobact SB	34	43	0	0	0	0	25	31
Budamate	66	83	08	10	42	53	64	80
Losar H	72	90	54	68	72	90	78	98
Cyclopam	80	100	22	28	52	65	80	100
Oflox TZ	80	100	74	93	80	100	80	100

For brands containing combination drugs, the interns' knowledge regarding the generic equivalents of all the components of the combination was maximum for Oflox TZ (93%) followed by Septid D (68%) and Losar H (68%). The knowledge of generic names of all the components of the preparations was below 50% for other brands. However, for each of the brands, the percentage of interns who identified correctly the generic name of at least one component of the preparation was higher than the percentage of interns who identified all components correctly (Table 2). In case of Zerodol P and Oflox TZ, all the interns had identified the generic name of at least one component correctly. The knowledge of generic equivalents was disappointing for Zovobact SB with no intern identify correctly even a single component of the combination (Table 2).

On assessing the knowledge of the indication for use for brands containing single preparations, Hicet topped the list with all the interns correctly identifying its indication for use followed by Asthalin (98%), Cifran (98%), Liponorm (78%), Daonil (63%), Lasix (53%) and Taxim O (48%). Knowledge of indication for use was low for Betaloc (33%), Valium (23%) and Diamox (0%) (Table 1).

For brands containing combination drugs, all the participants wrote the indication for use correctly for Zerodol P, Cyclopam and Oflox TZ. Knowledge of indication for use was satisfactory for Losar H (98%), Septid D (98%), Augmentin (90%), Iripan DSR (85%) and Budamate (80%). Knowledge of indication for use was low for Quadri Derm (31%) and Zovobact SB (31%) (Table 2).

DISCUSSION

In the present study, it was seen that a considerable percentage of interns had prescribed the brand names of drugs given in the questionnaire in the preceding six

months. Hence, they were familiar with the brand names given in the questionnaire. When authors assessed the knowledge of generic equivalents of the brand names containing single drugs, the percentage of interns who knew correctly the generic equivalent of each brand name was lower than the percentage who prescribed the respective brand in the preceding six months (Figure 1).

This difference was more striking for brands containing combination drugs (Figure 2). Hicet was the only brand prescribed by all interns whose generic name too was correctly known by all. Of particular interest was the finding with the brand Diamox as all interns prescribed this brand in the preceding six months but none knew its generic name. Another interesting find was that all interns had written the generic name of diamox as amoxicillin. Amoxicillin is an antimicrobial agent available in a brand name Dimox.⁵ However the brand Diamox contains acetazolamide which is an osmotic diuretic used for conditions like glaucoma.⁶ This points to a serious issue of cross prescribing look alike sound alike (LASA) names of drugs having different action, leading to dangerous consequences for the patient.⁷

On assessing the interns' knowledge of indication for use of the brands containing single preparations, Hicet was the only brand whose indication was correctly written by all the interns. For other brands, the percentage of interns correctly identifying the indication for use was lower than the percentage of interns prescribing them in the preceding six months (Figure 1). This points out to the fact that interns have at times prescribed the drug without knowing the correct indication. However, the prescribing in internship is often under supervision, hence the possibility of objectively following the instruction of a senior cannot be ruled out for the lack of knowledge of indication. However, if this is the case, it indicates towards the lack of

proper orientation of the interns to the clinical diagnosis and its pharmacological management.

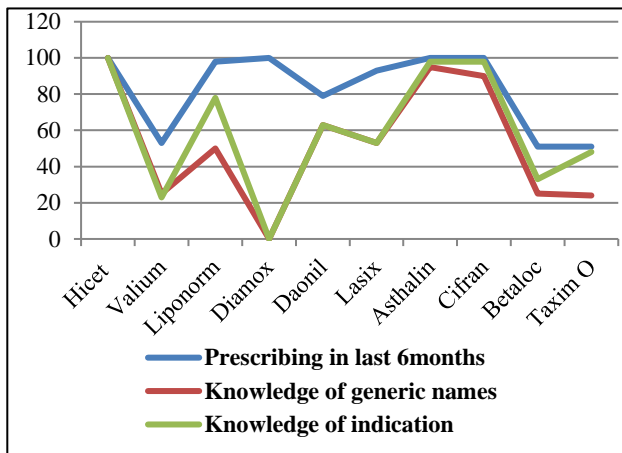


Figure 1: Comparison of percentage of interns prescribing the brand name in last six months, percentage of correct responses for generic name and percentage of correct responses for indication of different brands containing single preparation.

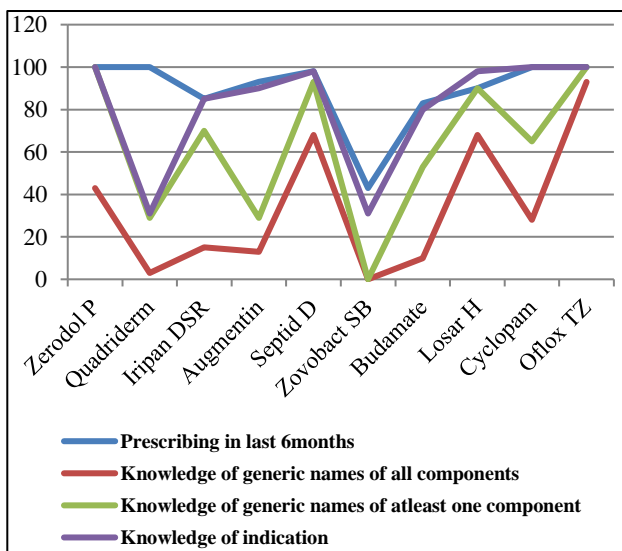


Figure 2: Comparison of percentage of interns prescribing the brand name in last six months, percentage of correct responses for generic name (of all components and of at-least one component) and percentage of correct responses for indication of different brands containing combination drugs.

An interesting finding was that for most brands, the percentage of interns who identified correctly the indication for use was higher than the percentage of interns who knew the respective generic name correctly. In case of brands containing combination drugs, the percentages of interns correctly identifying the indication for use was higher than the percentages of interns knowing the generic name of all the components of the brand. Their knowledge of indication for use hence could be based on their

knowledge of at least one component of the combination brands. This sort of prescribing without knowing all components of the brand has a bearing when one or more unidentified components might be contraindicated in certain patients. Another notable find that reinforces the above findings was that none of the interns knew the components of zovobact SB but a few identified correctly its indication for use as an antibiotic. However, no intern gave the specific spectrum for use of Zovobact SB.

The findings in the present study point to the fact that the intern doctors at the centre have prescribed brand names of drugs without knowing its actual nature or indication. Present study strongly points towards the gap in the knowledge between the brand name, its generic name and its indication. Biron's findings from Canada in the early 1970s support this view.⁸

In his study the physicians did not know the generic equivalents of the brand drugs they had prescribed within the previous year. Similar problems were identified in studies conducted by Gagne et al, and Hemminki et al.^{9,10}

Since this form of blind prescribing of brand names without knowing its generic name or indication for use is risky for patients, strategies need to be devised to mitigate it. Generic name prescribing by all should be encouraged in the hospital set up. The senior doctors should take efforts to educate the juniors regarding the generic names and the correct use of brand drugs prescribed under their supervision or guidance. Orientation programmes at the start of internship should emphasise on the principles of rational prescribing. Stringent regulations to make generic name prescribing mandatory will ensure that the safety of patients is not compromised due the confusion arising out of multitude of drug names.

CONCLUSION

Our study identified lacunas in the knowledge of interns regarding the generic name and indications for use of routinely prescribed brand names. This information gap and the confusion among the interns can have clinical consequences.

Hence, it is imperative that strategies like encouraging generic name prescribing, stringent regulations to make generic name prescribing mandatory in hospital and orientation of intern doctors about the right use of right drugs be devised to avoid it.

ACKNOWLEDGEMENTS

Authors would like to thank all the participants for sparing their valuable time for betterment of patient care.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Krishnan DG, Ubedulla S, Keloth AV. A questionnaire based study to assess the interns' knowledge about the brand names of drugs routinely prescribed in a tertiary care hospital in Kerala, India. *Int J Basic Clin Pharmacol* 2018;7:2042-6.