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Research Article

Pattern self-medication use of analgesics in Pune, Maharashtra, India

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ABSTRACT

Background: Objective of current study was to find out self-medication pattern and to study awareness of ADRs to analgesics self-medication.
Methods: II MBBS students collected the information of names of analgesics self-medication, dose, frequency of administration, health related problem for use of self-medication, source of information for the use of self-medication and information about ADRs. Students also educated the population about ADRs to analgesics with the help of ADR checklist.
Results: Paracetamol was most commonly taken as self-medication and 39% persons reported ADRs with paracetamol. Ibuprofen, diclofenac, paracetamol and aspirin were taken less than WHO DDD for joint pain. 79% study population was ignorant about ADRs to analgesics. Headache (37%) was common health related problem for self-medication of analgesics.
Conclusion: Information about problems with repeated use of analgesics like liver damage, analgesic nephropathy, gastric ulceration/bleeding should be provided by pharmacists either orally or with the help of leaflets or display board. Headache is common health related problem for the use of analgesics as self-medication. Pharmacists should take help of assistance tool to diagnosis headache like screener for migraine and guidelines for chronic headache for timely visit of self-medicating person to physician.

Keywords: Self-medication, Analgesics, Headache, ADRs

INTRODUCTION

Self-medication or non-prescription drug use is common in developing countries.[1] There is increase in trend for self-care which resulted in self-medication with powerful drugs including drug combinations.[2]

Advantages of self-medication are: 1) encouragement of consumer for taking active role in their health 2) monetary savings: total annual savings resulting from a move of 5% of prescribed medication to self-medication in seven European countries has been found to be more than €16 billion.[3] Development in self-medication need to be carefully managed if benefits are to be maximized and to decrease the potential risk.[2]

Pain problems are important reasons for self-medication of analgesics. One of the commonest complaints for use of analgesic self-medication is headache. Around 25% patients are not happy with physician's treatment for headache and 45% migraine patients do not take advice

of physician for headache and take self-medications for relief of headache.[4] Chronic pain complaints lead to more consumption of analgesics, mostly in females.[5] Analgesics were found to be topmost self-medication used in Pune as observed in previous studies.[6,7]

Hence this study was planned to explore the pattern of analgesic self-medications use in Pune with following aims and objectives:

1) To find out common health related problems for the use of self-medication of analgesics.

2) To find out commonly used analgesics as single drug or Fixed Dose Combinations (FDCs) as self-medication in Pune.

3) To find out analgesics which cause Adverse Drug Reactions (ADRs).

4) To study the knowledge of adverse effects to analgesics by asking question s regarding ADRs to particular analgesic self-medication and educating them on analgesic ADRs with the help of ADR checklist.

5) To find out whether analgesics as self-medication had been taken as per WHO Anatomical Therapeutic Classification (ATC) Daily Defined Dose (DDD).[8]

6) To find out association of analgesic self-medication with demographic factors.

METHODS

It was a cross sectional observational study. Data collected by II MBBS students of tertiary care hospital & medical college in Pune, Maharashtra, India by visiting different medical shops in Pune where the persons were buying analgesics without prescription.

Semi-structured questionnaire prepared by department of pharmacology was used for data collection and following information were obtained: 1) Information of analgesics self-medication including duration, dose, frequency of drug administration and health related problem for the use of self-medication 2) Source of information for self-medication, 3) Adverse effects experienced by study population to analgesic self-medications.

Students had also asked the certain questions to participants regarding knowledge of ADRs to analgesics with the help of ADR checklist. Students also educated the study population about ADRs to analgesics with the help of ADR checklist.

Rationality of Fixed Dose Combinations (FDCs) self-medication was assessed according to WHO model list of essential drugs, 18th Edition.[9]

RESULTS

32% analgesics self-medication were in the form of FDCs and none of them was rational FDC as per WHO model list for essential drugs.[9] Self-medication of analgesics was associated with higher education (Table 1). 46% analgesic self-medication was seen in population monthly income less than INR 10000.

Table 1: Demographic characteristics of the analgesic self-medication in Pune.

Sr. No.	No. (%)
Total number of self-medications	142
Sex	
Male	85 (59.86)
Female	57 (40.14)
Drugs used for self-medication	
Single drug	97 (68.31)
Fixed dose combinations	45 (31.69)
Rational Combinations	0
Education levels	
Illiterate	4 (2.82)
Primary school	6 (4.23)
Secondary school	28 (19.72)
Higher secondary	30 (21.13)
University degree & postgraduate	74 (52.11)

Table 2: Demographic characteristics of the analgesic self-medication in Pune.

Sources of information	No. (%)
Initial doctor's prescription	54 (38.03)
Chemist advice	40 (28.17)
Information from Neighbour	19 (13.38)
Advertisement on TV, newspaper	23 (16.20)
Others (internet, telephonic advice)	6 (4.23)

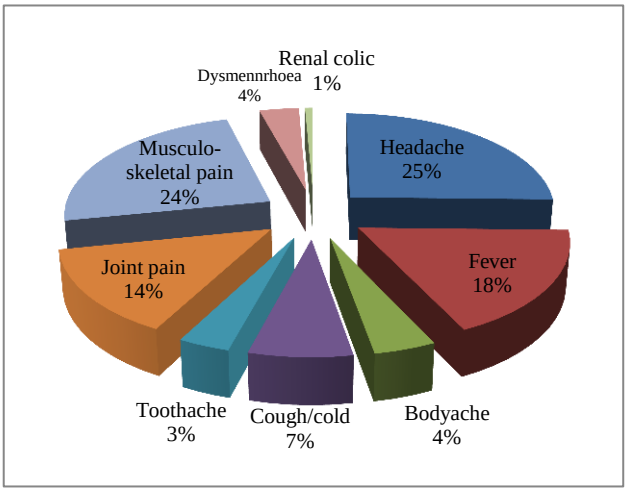

Figure 1: Diagnosis for the use of analgesics self-medication.

As per WHO ATC,[8] M 01 (Anti-inflammatory and anti-rheumatic products), M 02 (Topical products for joint and muscular pain), N 02 (analgesics) are commonly self-medicated in Pune and 43% analgesics self-medication was associated with ADRs. 27% analgesic self-medication was paracetamol. 39% ADRs reported to paracetamol were like nausea, vomiting and hyperacidity. 50% analgesic FDCs used, caused ADRs in self-medicating persons.

Headache (37%) was common health related problem for self-medication of analgesics. Musculo-skeletal pain (19%), joint pain (12%), fever (15%) were others reasons for analgesics self-medication use (Figure 1).

Table 3: ATC/DDD and ADRs to analgesics self-medication in Pune.

ATC code of the drug	Names of the drug	DDD	ADRs reported to self-medication
M 01 - Anti-inflammatory and anti-rheumatic products (single drug)			
M01AE01	Ibuprofen	1.2 gm	Nausea-8
			Vomiting-1
M01AB05	Diclofenac	0.1 gm	Nausea-7
			Vomiting-5
			Dizziness-1
M01AE03	Ketoprofen	015 gm	-
M01AX17	Nimesulide	0.2 gm	Vomiting-1
			Dizziness-1
M 01 - Anti-inflammatory and anti-rheumatic products (FDCs)			
M01AE51	Ibuprofen + paracetamol	3 UD	Nausea-4
			Hyperacidity-4
M01AB55	Diclofenac + paracetamol	2 UD	Nausea-2
			Vomiting-1
M01AB55	Diclofenac + paractamol + chlorzoxazone	2 UD	Drowsiness-2
M01AB55	Diclofenac + Drotavarine	2 UD	Vomiting & dry mouth
M01AB56	Aceclofenac + paracetamol	2 UD	Nausea-2
M 02 - Topical products for joint and muscular pain			
M02AA15	Diclofenac	-	-
N 02 - Analgesics			
N02BE01	Paracetamol	3 gm	Nausea-5
			Vomiting-1
			Hyperacidity-2
N02BE51	Paracetamol+ phenylephrine + chlorpheriramine maleate	3 UD	Drowsiness-2
N02BA01	Aspirin	3 gm	Nausea-3
			Diarrhea-1
			Vomiting-1

ATC DDD analysis for drugs used as self-medication in this study had shown that ibuprofen, diclofenac, paracetamol and Aspirin were taken less than DDD (Table 3).

Only 21% self-medicating persons were aware of some ADRs to analgesics.

DISCUSSION

Analgesics have been most commonly used as self-medication seen in previous studies.[6,7,10-12] 32% analgesics self-medication were in the form of FDCs. FDCs self-medication were taken largely from initial doctor's prescriptions. CIMS[13] and drug today[14] indices of marketed drugs have listed various irrational FDC preparations in the class of analgesics that are available in the Indian market. All analgesics FDCs that were self-medicated in this study were irrational according to WHO model list for essential drugs.[9] Regulations are needed for manufacturing of new FDCs, Food and Drug Administration (FDA) should not permit manufacture of new analgesic FDCs as there is no substantial benefit of FDC over single drug formulation. Definitive steps for dispensing of FDCs should be taken by FDA for stopping the overuse of analgesics.

Repeated consumption of paracetamol can cause ADRs like liver damage and drugs interactions like paracetamol toxicity if taken with alcohol/ other enzyme inducers due enzyme induction.[15] Repeated use of other analgesics are associated with adverse renal effects and gastric ulceration or bleeding.[15] In previous study in Pune, it was found that 83% shopkeepers are not telling about ADRs, mostly due to the time factor.[16] There is increased need for consumer awareness prior taking analgesics self-medication. Increase awareness of analgesics will not increase the self-medication of analgesics as observed in a previous study in Australia.[3] Hence, educational interventions like flow charts, newsletters, bulletins to prescriber and educational campaign for patients on analgesic use, their uses and limitations may have crucial role in preventing or overuse of analgesics self-medication.[17-19]

Previous doctor's prescription (38%) was the major source of self-medications information in this study, followed by chemists' advice (28%). Advertisement (16%) has been emerged as 3rd source of information for analgesic self-medication use (Table 2). Our study results are in line of previous studies.[5,6,10,11] Regularization of advertisement may help in curbing the use of analgesics self-medication. Greater collaboration between doctors and pharmacists will be critical and joint training on over the counter self-medication helpful for solving the problem of overuse of analgesics self-medication.[2]

Headache is the commonest cause for use of analgesic self-medication in this study and pharmacist was one of the major source of information of self-medication. Naito

et al.[20] in their study observed that pharmacist in community pharmacy recommending drugs for headache and elucidated future needs using a questionnaire intended for doctors and pharmacists. More than 50% pharmacists were not having any experience with recommending Over The Counter (OTC) drugs for patients with headache, hence they were not able to give proper guidance about need of physician visit or OTC medication and recommended use of assistance tool to diagnosis headache like screener for migraine and guidelines for chronic headache.[20]

The factors that influence self-medication are patient satisfaction with the healthcare provider, cost of the drugs, educational level, socioeconomic factors, age and gender.[10] In this study, decreased healthcare cost and education level are the factors observed that can affect self-medication of analgesics.

CONCLUSION

Easy availability of drugs from pharmacist is major factors for increased use of self-medication. Educational interventions on analgesic use, their uses and limitations may have crucial role in preventing analgesic self-medication. Prescribing physician can also educate about ADRs with repeated use of analgesics. Information about problems with repeated use of analgesics like liver damage, analgesic nephropathy, gastric ulceration/bleeding should be given by pharmacists. Information about these problems should put as leaflets in bold letters or display board that can be kept at sell counters. As analgesic combination leads to more number of ADRs. Analgesics FDCs should not be dispensed without doctor's advice. FDA may formulate strict regulations for dispensing of FDCs analgesics.

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