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Original Article

Comparative Availability of Selected Essential Medicines for Selected Common Ailments in Sonipat City

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ABSTRACT

Background: Inappropriate access and availability of essential medicines contribute substantially to out-of-budget expense. A significant population of developing countries (upto 90%) purchase medicines through out-of-pocket payments. Out-of-pocket expenditure makes a vital (up to 80%) health expenditure in India. This research study was conducted to investigate the comparative availability of selected essential medicines for selected common ailments in Sonipat city. **Methods:** A research study on comparative availability of selected essential medicines for selected common ailments was conducted. Standardized methodology of World Health Organization and Health Action International was employed. The study was conducted on all the two hundred retail pharmacy outlets attached to all residential areas of Sonipat city. A baseline data on availability of selected essential medicines was collected on data collection format as prescribed in World Health Organization and Health Action International manual.

Results: Medicine availability ranged from 70% - 100% except for ampicillin (11%), miconazole (32%), gentamicin (51%), and clindamycin (64%).

Conclusions: Dissemination of well documented information on availability to medicine consumers in all residential areas may enhance consumer demand for essential medicine that are priced lower than their branded or branded generic versions and thus may serve to enhance the availability of demanded medicine in all the areas of Sonipat city.

Key words: Essential medicines, Accessibility, Availability, Common ailments, Retail pharmacy outlets

1. INTRODUCTION

The concept of essential medicines was launched in 1977, with the publication of the first World Health Organization's Model List of Essential Medicines. In 2007, World Health Organization (WHO) survey of

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156 countries showed that 86% of responding countries have a National Essential Medicine List (EML), including all low-income countries and most middle-income countries. [1] World Health Organization (WHO) celebrated the 30th of the Model List of Essential Medicines in 2007. World Health Organization (WHO) promotes Essential Medicine List (EML) to facilitate equality in access to medicines over the globe. [2, 3] Essential medicine lists has been formulated to satisfy the priority health care needs of community in terms of availability and affordability of essential medicines. [4] According to the Universal Declaration of Human Rights and the Millennium Development Goals, [5, 6] the World Health Organization (WHO) recommends the global implementation and regular updates of the national essential medicines list for ensuring availability of essential medicines in middle and low income countries. [7] Since 1977, World Health Organization (WHO) published the first model list of essential medicines which is revised every two years by the WHO Expert Committee on the selection and use of essential medicines. [8] This model list of World Health Organization (WHO) serves as a guide for the development of National essential medicines list (NEML). [9] This concept of essential medicines has become global and more than 150 countries have their national list of essential medicines and over 100 countries had a national medicines policy. [10, 11] Among these, 94% use the essential medicines list (EML) as a basis for public procurement of price to access essential medicines majority for the poor. [9] Recently, the Ministry of Health and Family Welfare (MOH and FW) Government of India (GOI) [12] revised the National list of essential medicines India in June 2011. [13, 14]

The major challenge of National health care system is to provide appropriate health products in a reasonable, reliable and efficient way accessible to majority of the community. [15] Essential medicines list (EML) of the World Health Organization's (WHO's) provides a blueprint of selecting cost effective and high quality medicines for nations. [16] Since 2002, Essential medicines satisfy the priority health care needs of the community; selected with regard to public health relevance, evidence on efficacy, safety and at a comparative cost intended to be available at all times in adequate amounts and in the appropriate dosage forms at a price that individual and community can easily afford. [17, 18]

The present study is perhaps the only study that compares the availability of selected essential medicines for selected common ailments in a single district of any state. This research study covers whole of Sonipat and serve to document the comparative availability of selected essential medicines for selected common ailments in different geographical areas of Sonipat city. The method used in the present study is based on World Health Organization (WHO), Geneva Switzerland and Health Action International Global (HAI), Amsterdam Netherland Guidelines. [19, 20]

2. MATERIAL AND METHODS

2.1 Background

Sonipat, the district of Haryana is located in the south-east of the state of Haryana. At the district level, health services of the government is rendered through 100 bedded hospital at Sonipat town, 7 community health centres (CHC) including one at Gohana town with 50 beds, and 29 primary health Centre(PHC). Sonipat city has Hospital formulary of Essential Medicines List. To investigate the comparative availability of selected essential medicines for selected common ailments at retail pharmacy outlets in Sonipat city were included in this study.

2.2 Sampling

This baseline data collection research study was documented at retail pharmacy outlets in different geographical areas of Sonipat city.

2.3 Medicines Surveyed

Eighteen essential medicines for selected common ailments were selected. Out of these selected essential medicines, two for palliative care i.e. Ibuprofen, Paracetamol, four for gastrointestinal disturbances i.e. Omeperazole, Ranitidine, Ondansetron, Metoclopromide, ten antibacterials are i.e. Metronidazole, Amoxicillin, Ciprofloxacin, Azithromycin, Erythromycin, Cefixime, Cephalexin, Ofloxacin, Ampicillin, Gentamycin and two antifungals are Miconazole, Clindamycin in different dosage forms (Table 1) were selected. The basis for their selection was that these eighteen essential medicines have been included in the WHO Essential Medicine List, National List of Essential Medicine India and Hospital Formulary of Sonipat city.

As per WHO/HAI methodology, data was collected for both the originator brand and the lowest- priced generic found at each retail pharmacy outlet. In India, originator brands have not any additional recognition as originator brand. The same molecules other than originator brands manufactured by other companies with different trade names called branded generics.

Table 1: List of selected Essential Medicines for selected Common Ailments

S. No.	Essential Medicine	Dossage form
1	Ibuprofen	Tab
2	Paracetamol	Tab
3	Omeperazole	Tab/cap
4	Ranitidine	Tab
5	Ondansetron	Tab
6	Metaclopromide	Tab
7	Metronidazole	Tab
8	Amoxicillin	Tab/cap
9	Ciprofloxacin	Tab/cap
10	Azithromycin	Tab/cap
11	Erythromycin	Tab/cap
12	Cefixime	Tab/cap
13	Cephalexin	Tab/cap
14	Ofloxacin	Tab
15	Ampicillin	Tab/cap
16	Gentamycin	Tab/in
17	Miconazole	Tab/ointment
18	Clindamycin	Cap/ointment

2.4 Data Collection

For collecting data, different geographical areas as shown in Figure 1 were decided to cover. A standardized format for data collection was prepared using standardized WHO & HAI (World Health Organization & Health Action International) manual. A well documented baseline data was collected on availability for reference of medicine consumers; develop an effective framework for medical health and improve equitable access to selected essential medicines for selected common ailments in Sonipat city. This baseline data was collected at retail Pharmacy outlets of different geographical areas in Sonipat city.

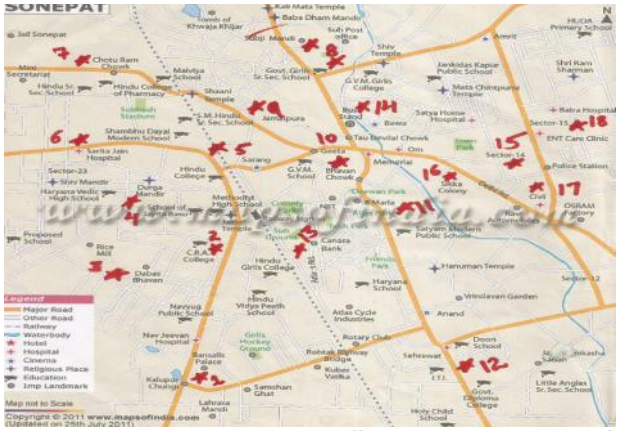

Fig 1: Administrative map showing different geographical areas of Sonipat city

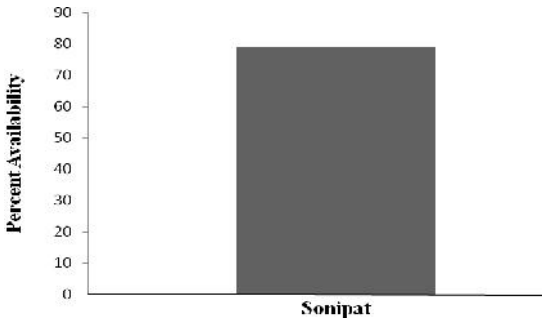

Fig 2 : Percent availability of selected essential medicines for selected common ailments in Sonipat city

2.5 Methodology

Step 1: Percent availability of selected essential medicines in different geographical areas of Sonipat city: In this procedure, availability of each essential medicine for common ailments was collected and

means availability of each essential medicine was calculated in different geographical areas of Sonipat city. In this way total mean percent availability of essential medicines for common ailments were calculated.

Table 2: Mean Availability of Number of Brands in Sonipat.

Essential Medicines	Mean Availability of Number of Brands±S.E.M.
Ibuprofen	2±0.32
Paracetamol	7±0.32
Omeperazole	6±0.32
Ranitidine	3±0.32
Ondansetron	5±0.32
Metaclopramide	3±0.32
Metronidazole	2±0.32
Amoxicillin	7±0.32
Ciprofloxacin	5±0.32
Azithromycin	8±0.32
Erythromycin	2±0.32
Cefixime	5±0.32
Cephalexin	4±0.32
Ofloxacin	5±0.32
Ampicillin	2±0.32
Gentamycin	3±0.32
Miconazole	4±0.32
Clindamycin	5±0.32

Table 3: Percent Availability of Most Common Low Priced Sold Brand of Selected Essential Medicine for Selected Common Ailments in Sonipat City.

Essential Medicines	Most Common Low Priced Sold Brand	Percent Availability
Ibuprofen	Brufen	90%
Paracetamol	Paracip	58.33%
Omeperazole	Ocid	80%
Ranitidine	Zinetac	66.67%
Ondansetron	Emeset	54.44%
Metaclopramide	Perinorm	70%
Metronidazole	Metrogyl	83.89%
Amoxicillin	Novamox	74.44%
Ciprofloxacin	Ciplox	80.28%
Azithromycin	Azee	60.28%
Erythromycin	Altrocin	75.56%
Cefixime	Zifi	64.72%
Cephalexin	Phexin	50.28%
Ofloxacin	Oflox	78.33%
Ampicillin	Campicillin	8.89%
Gentamycin	Gentamycin	43.61%
Miconazole	Micogel	16.94%
Clindamycin	Clingard-A	40.83%

Step 2: Percent availability of selected essential medicine and its brand in different geographical areas of Sonipat city: In this procedure data was collected on different brands for a specific essential medicine available at each pharmacy outlet in a specific area. Mean availability of each brand of essential medicine was calculated at specific area. In this way total mean availability of each brand of all essential medicines for common ailments in different geographical areas of Sonipat city was calculated.

Step 3: Availability of most common low priced sold brand of selected essential medicines in Sonipat city: After the mean percent availability of different brands of each essential medicine, the mean percent availability of most common low priced sold brand of each essential medicine in Sonipat city was calculated.

2.6 Data processing

Availability of each selected essential medicine, availability of most common sold brand and availability of number of brands given by retail pharmacist to consumers for selected common ailments was analyzed by standard mean error.

2.7 Ethical approval

Ethical approval of the study was obtained from Municipal Council of Sonipat city.

3. RESULTS

3.1 Percent availability of selected essential medicines in different geographical areas of Sonipat city:

Availability is presented as percentage of the essential medicines found on the pharmacy outlets surveyed. Overall availability of selected essential medicines for selected common ailments is 79.16% in Sonipat city shown in figure 2.

3.2 Medicines with poor availability:

Out of eighteen selected essential medicines, Ampicillin and Miconazole had less than 50% availability on the pharmacy outlets surveyed.

3.2 Percent availability of selected essential medicine and its brand in different geographical areas of Sonipat city:

Mean availability of number of brands of selected essential medicines for selected common ailments is

shown in table 2. Azithromycin had found to be maximum number (eight) of brands where as Ibuprofen, Metronidazole, Erythromycin and Ampicillin had only two brands.

3.3 Availability of most common low priced sold brand of selected essential medicines in Sonipat city:

Brufen, Metrogyl, Ocid, Ciplox, Perinorm, Novamox, Altrocin and Oflox had 70-90% most common sold brand available in market. Cephalexin, Ondansetron, Paracetamol, Azithromycin, Cefixime, and Ranitidine had 50-70% most sold brand in market. Campicillin, Miconazole, Clindamycin and Gentamycin had less than 50% most common sold brand available in market as shown in table 3.

4. DISCUSSION

Sonipat spans a relatively small geographical area as compared to other Haryana state districts. Therefore, a more detailed study that samples a large percentage of availability will be possible. This study should be useful to government health policy makers in providing a broad picture of the present situation regarding availability of selected essential medicines for selected common ailments in Sonipat city. Dissemination of well documented information on availability to medicine consumers in all residential areas may enhance consumer demand for lower price medicine and thus may serve to enhance the availability of demanded medicine in all the areas of Sonipat city.

The present study is perhaps the only study that compares the availability of selected essential medicines for selected common ailments in a single district of any state. This study covers whole of retail pharmacy outlets of Sonipat city and serve to document the overall availability, availability of most common low priced sold brand, availability of number of brands by consumers of selected essential medicines for selected common ailments in different geographical areas and shall be source of information; which medicine is available in which area of Sonipat. From this study, people of Sonipat will come to know about the availability of each medicine in their area which is usually not known.

4.1 Overall availability

Availability of few medicines was found to be suboptimal; for many medicines, only one version of the product was available that was the costly or branded medicine (popular name). Therefore, the consumer has no option to buy that costly branded product. Retail pharmacy outlets stock those medicines that are mostly prescribed by doctors; indicates that doctors tend to prescribe branded medicines to consumers. The good overall median availability of surveyed essential medicine for selected common ailments was above 70% in Sonipat city except four medicines i.e. Ampicillin (11%), Gentamycin (51%), Miconazole (32%) and Clindamycin (64%). Brufen, Metrogyl, Ocid, Ciplox, Perinorm, Novamox, Altrocin and Oflox had 70-90% most common sold brand available in market. Azithromycin had found to be maximum number (eight) of brands availability. Availability of Ibuprofen, Metronidazole, Erythromycin and Ampicillin had only two brands. From observation in the present study, overall availability of selected essential medicines for selected common ailments was good except few medicines.

4.2 Policy options to improve availability

Lower availability of few medicines is due to inefficient purchasing or distribution in the retail pharmacy outlets. [21, 22] For improving availability of selected essential medicines; various recommendations such as government to increase the budget of medicines, prepare Standard Treatment Guidelines (STGs) and Essential Medicine List (EML) on the basis of essential medicine concept; separate EML for primary care and hospitals; procurement and distribution of medicines on the basis of EML;

prescription according to STGs and EML and regular monitoring and evaluating system. [23, 24]

5. CONCLUSION

In the present study, overall availability was good except few medicines i.e. Ampicillin, Gentamycin, Miconazole and Clindamycin had been observed in Sonipat city. We need to have policy actions based on documented availability surveys to improve access to essential medicines. Awareness programmes targeting to doctors, patients, consumers and the media should be needed that focus on the disparity in the availability of different brands of the same essential medicine.

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