Evaluation of the drug prescription status based on the WHO indices in pharmacies of health care centers affiliated to Tehran University of Medical Sciences

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Abstract

Background: As a major responsibility, health authorities must control rational prescription of drugs (RUD). A way to analyze the regional status of drug prescription is the WHO’s recommended indices. The purpose of the study was to determine the status of drug prescriptions in pharmacies of healthcare centers under the authority of Tehran University of Medical Sciences based on the WHO indices.

Methods: In this study, 28 pharmacies of health care centers under the supervision of Tehran University of Medical Sciences were selected and 3420 drug prescriptions were examined.

Results: the study revealed that the average number of drug per prescription was 3.03 (SD=0.72). 56.49% of prescriptions contained at least one antibiotic. Moreover, at least one injectable drug was prescribed in 28.96% of prescriptions.

Conclusion: Health authorities must play pivotal role in improving rational use of drugs. General practitioners are the major chain in RUD cycle. Results showed that we need to design some educational programs such as holding workshops on the RUD for physicians, public education and also producing related printed materials and advertising in the Media. These programs may improve the status based on the WHO indices which for example refers to the percentage of prescription of antibiotics & injections in the region.

Keywords: WHO drug prescription indices, Antibiotic prescription, Injectable drugs, Regional prescription, Health center pharmacy.

Introduction

Nowadays, medication is known to be one of the most important parts of the health services and as a main index for the society, development and comfort.

Improvements in the medical technology are based on the industrialization and appearance of new methods for disease management and modern drugs production. The uncontrolled progressive growth of population and change of life style has increased the costs of health services and managements in a developing society such as Iran.

The WHO recommends rational prescription and use of drugs and also utilizing suitable methods to evaluate the status of drug prescription and use in various regions. It may be helpful for solving the practical problems related to drug prescription and
Table 1. The WHO indices for Shahr-e-Rey, Islamshahr and South of Tehran Health Center during 2008-2009.

<table>
<thead>
<tr>
<th>Center name</th>
<th>Average number of prescription drugs</th>
<th>Percentage of prescriptions containing antibiotic</th>
<th>Percentage of prescriptions containing Injections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamshahr</td>
<td>2.92 (SD=0.54)</td>
<td>60.76</td>
<td>38.77</td>
</tr>
<tr>
<td>Shahr-e-Rey</td>
<td>3.32 (SD=0.66)</td>
<td>56.82</td>
<td>31.98</td>
</tr>
<tr>
<td>South of Tehran Health Center</td>
<td>2.86 (SD=0.60)</td>
<td>51.88</td>
<td>36.48</td>
</tr>
<tr>
<td>Deputy of Health</td>
<td>3.03 (SD=0.72)</td>
<td>56.49</td>
<td>35.74</td>
</tr>
</tbody>
</table>
lowest and Islamshahr with 60.76% had the highest rate.

For the percentage of prescription containing at least one injectable drug, Shahr-e-Rey with 31.98% had the lowest and Islamshahr with 38.77% had the highest rate.

The WHO indices in the cities which are under supervision of Tehran University of Medical Science are shown in Table 1.

Discussion

The Rational Use of Medicine Committee (RUMC) reported the average number of 3.4 drugs per prescription in Tehran in 2007-2008 [5]. In a study performed in 2003 in Kerman for evaluation of the general practitioners’ prescription status, the average of 3.4 was reported which is close to RUMC report for 2007-2008 [2].

In our current study, the average number of drugs per prescription was 3.03 which is lower than the RUMC 2007-2008 report, and corresponds to various reports from some developing countries such as Lebanon, Yemen, Sudan, Nigeria and Jordan [6-8].

56.49% of prescriptions had at least one antibiotic which is much higher than the similar reports for Tehran during 2006-2007 [5], Kerman in 2003 (33.95%) [2], Lebanon (17.5%) and Zimbabwe (29%) and close to Sudan (63%) and Jordan (60.9%) reports [6].

There are also several reports indicating inappropriate prescription of antibiotics in teaching hospitals in some developed countries such as the USA, Canada and Australia [9].

Inappropriate and uncontrolled prescription of antibiotics may lead to increase of the resistance of microorganisms and it is more critical than unexpected and adverse effects of using drugs. According to the WHO reports, in the USA there are 40,000 deaths annually reported due to the hospital infections caused by microorganisms resistant to routine antibiotics [10-12].

Since in Iran antibiotics have the highest percentage of sale and inappropriate use, proper education for health groups and medical students seems essential.

In this study, the percentage of prescriptions containing at least one injectable drug was 35.74%, compared to the other reports for example for Tehran in 2007 as 14% [5], for Kerman during 2003-2004 42.4%, and for some other developing countries 36% - 48% [6,7].

There is an inappropriate and uncontrolled prescription of injectable form of drugs in most parts of the world [12,13]. Since injectable drugs are always more expensive than the other forms and most of patients prefer non-injectable forms, and also for more possibility of side and bad effects of injectable drugs, designing educational programs revising the tendency of physicians in prescribing injectable form of drugs seems inevitable.

Conclusion

Inappropriate drug usage depends on several factors including: insufficient drug information; irrational demand by patients; socio-cultural factors; lack of effective and regular controlling mechanism for physicians; and lack of practicable policy to move towards the promotion of rational prescription and use of drugs.

Application of therapeutic protocols, physician training, group discussion and notification, and supervision over the drugs prescription are recommended for improving the status of RUD.

References

2. The survey of Indices of practitioner of General prescription in Kerman province. Babol University of Medical Journal 2005-2006. 7(4) 76-78.
6. Moghadamina AA, Mirbolooki MR, Aghili MB


