Antipsychotics use in the community of Thessaloniki, Greece

Primena antipsihotika na teritoriji Soluna, Grčka

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Abstract

Background/Aim. Under the current financial crisis in Greece, an effort has been made by the Greek health authorities to encourage generic prescribing, in order to lower medicinal cost. The purpose of this work was to study antipsychotics use, and to calculate utilization of generics in antipsychotics sales in a sample from the medicines market of Thessaloniki, the second largest city in Greece. Methods. A sample of antipsychotics registered sales was collected using the new Electronic Health Records that have been applied in pharmacies during the last years in Greece. The sample corresponded to a small amount of sales from the market of Thessaloniki during the period July 2014–June 2015, including only community and no hospital sales. All brand names (prototype and generics) of antipsychotics and their relative ratios in the sales were estimated, and the percentage of generics in the sale of each medicine was calculated. The amount of medicines was estimated in Defined Daily Doses (DDDs) of the reference/prototype drug and its generics. Results. Olanzapine, quetiapine, haloperidol and risperidone sales corresponded to 77% of total antipsychotics sales with percentages of sales 25%, 19%, 19% and 14% respectively. The percentage of sales of other antipsychotics was 7% for amisulpride, 6% for aripiprazole, 4% for ziprasidone and 3% for clozapine. Generic use corresponded to 41% of total sales of antipsychotic drugs (12,884 DDDs out of 26,433 DDDs). Concerning second generation antipsychotics, generic use was high for amisulpride, olanzapine, risperidone and quetiapine. Conclusion. In the study sample, second generation antipsychotics corresponded to 78% of sales in the community of Thessaloniki. Haloperidol utilization was also notable. Considering Greek practices, the percentage of generics in antipsychotics sales was very high even for some of the newest antipsychotics.

Key words: antipsychotic agents; drugs, generic; prescription drugs; economics, pharmaceutical; greece.

Apstrakt


Ključne reči: tranquilizeri, veliki; lekovi, generički; lekovi, propisivanje; ekonomija, farmaceutska; grčka.
Introduction

The use of generics in the Greek medicines market is generally lower than in other European countries, accounting for only 11.6% of total pharmaceutical expenditures in 2006. This can be attributed to a general lack of confidence in generics, a previous lack of national policy to encourage generic use as well as to small difference in prices between generic and prototype medicines in Greece.

Under the current financial crisis, an effort has been made by the Greek health authorities to encourage generic prescribing in order to lower medicinal cost.

Published data on generic use in Greece are generally limited and Greece has not participated in large European studies on drug utilization, probably due to, until recently, lack of detailed Electronic Health Records. The purpose of this work was to study antipsychotics use, and to calculate utilization of generics in the community of Thessaloniki – the second largest city in Greece – after the adoption of measures to contain medicinal cost.

Methods

A sample of antipsychotics registered sales was collected using the new Electronic Health Records that have been applied in pharmacies during the last years in Greece. The sample corresponded to a small amount of sales from the market of Thessaloniki during the period July 2014 – June 2015, including only community and no hospital sales from the areas of central and Eastern Thessaloniki city and the suburban municipalities of Kalamaria and Panorama. The majority of medicines were obtained after prescribing by a physician, with a negligible percentage (less than 1%) of over the counter sales.

All brand names (prototype and generics) of antipsychotics and their relative ratios in the sales were estimated and the percentage of generics in the sale of each medicine was calculated. The amount of medicines was estimated in daily defined doses (DDDs) of the reference drug and its generics, according to the World Health Organization (WHO) Drug Statistics Methodology, as described in the 2015 Guidelines for Anatomic Therapeutic Chemical (ATC) classification and DDD assignment.

Statistical analysis was performed by means of the statistical package SPSS 17.0 (SPSS Inc, Chicago, IL).

Results

In our study sample, all medication products were single-ingredient products. A total of 26,433 DDDs of antipsychotic drugs was sold during the study period in the pharmacies that participated in the study.

Olanzapine, quetiapine, haloperidol and risperidone sales corresponded to 77% of total antipsychotics sales with percentages of sales 25%, 19%, 19% and 14%, respectively. The percentage of sales of other antipsychotics was 7% for amisulpride, 6% for aripiprazole, 4% for ziprasidone and 3% for clozapine. Detailed results on antipsychotics sales can be seen in Table 1 and Figure 1.

Although second generation antipsychotics shared the 78% of the sales in the study sample, haloperidol utilization was also considerable (19%, see Table 1 and Figure 1). Generic use corresponded to 41% of total sales of antipsychotic drugs (10,884 DDDs out of 26,433 DDDs). The percentage of generics in second generation antipsychotics sales was high for olanzapine (66%), quetiapine (41%), risperidone (59%) and amisulpride (100%). Results on generic use of other antipsychotics can be seen in Table 1 and Figure 1.

The use of prototypes (reference drugs) was high for some of the newest second generation antipsychotics as well as for all first generation antipsychotics that were consumed in our study sample (see Table 1 and Figure 1).

The relative use of reference drugs and generics is presented in Figure 1.

![Fig. 1 – Use of generics and reference antipsychotics in the community of Thessaloniki, Greece.](image-url)
Table 1

Antipsychotics sales in the market of Thessaloniki, Greece

<table>
<thead>
<tr>
<th>Active Substance</th>
<th>Reference drug</th>
<th>Generic</th>
<th>Total</th>
<th>DDDs</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risperidone</td>
<td>1.512</td>
<td>2.192</td>
<td>3.704</td>
<td>41</td>
<td>100</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>2.076</td>
<td>2.936</td>
<td>5.012</td>
<td>59</td>
<td>100</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>4.326</td>
<td>6.580</td>
<td>10.906</td>
<td>66</td>
<td>100</td>
</tr>
<tr>
<td>Aripiprazole</td>
<td>0</td>
<td>1.549</td>
<td>1.549</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Clozapine</td>
<td>0</td>
<td>817</td>
<td>817</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Ziprasidone</td>
<td>0</td>
<td>1.078</td>
<td>1.078</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Amisulpride</td>
<td>1.890</td>
<td>28</td>
<td>20.790</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Paliperidone</td>
<td>0</td>
<td>4.919</td>
<td>4.919</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>400</td>
<td>4.919</td>
<td>4.919</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>400</td>
<td>69</td>
<td>469</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Levomepromazine</td>
<td>0</td>
<td>69</td>
<td>69</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Zuclopenthixol</td>
<td>387</td>
<td>387</td>
<td>387</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10.884</td>
<td>26.433</td>
<td>37.317</td>
<td>41</td>
<td>100</td>
</tr>
</tbody>
</table>

**Discussion**

In our study, the most widely used antipsychotics were olanzapine, quetiapine, haloperidol and risperidone (in 77% of cases), followed by amisulpride, aripiprazole, ziprasidone and clozapine. These results are in accordance with the National Institute for Health and Care Excellence (NICE) Guidelines and reflect prescribing patterns similar to those observed in other countries.

As expected, second generation antipsychotics replaced older antipsychotics and represented the majority of sales in the study (78% of total sales), with olanzapine, quetiapine and risperidone sharing the 58% of sales. Among first generation antipsychotics, haloperidol shared a considerable per-

antipsychotic therapy 3, 4, the use of generics seems inevitable in or-
original clozapine was consumed in our study in Thessaloniki.
and this makes generic use financially favorable.
price of second generation antipsychotics is much higher,
of generics financially indifferent. On the other hand, the
price of first generation antipsychotics, which makes the use
reference drugs were used. This can be explained by the low
of first generation antipsychotics, which makes the use
speridone, 41% for quetiapine and 100% for amisulpride. On
neration antipsychotics, with 66% for olanzapine, 59% for ri-
nonproprietary name (INN) prescribing 6, 17. Although prices of
in 2009 was only 4% 18. After the financial crisis that hit Greece sin-
cost within health expenses.
utilization in Greece, our study appears to reflect the real
situation in prescribing and consumption of antipsychotics in
the community of Thessaloniki 20.

Another limitation of this study is that our sample does
not correspond to a specific area or district of the town and
the size of population corresponding to consumed
antipsychotics in the studied period cannot be estimated;
thus, the utilization of antipsychotics cannot be calculated
in standard units DDDs/1000 inhabitants/day, and is roughly
calculated in DDDs. Nevertheless, our study is one of the
few studies on drug utilization in Greece expressing con-
sumption in DDDs and not in cost 18, 20–22 and our results on
specific antipsychotics preference seem to be comparable
to those observed in other countries 12–15.

Moreover, since there are no major studies on drug uti-
ilization in Greece, our study appears to be useful in present-
ing data on antipsychotics utilization in Greece.

Conclusion

In our study sample, second generation antipsychotics
predominated in antipsychotics use in the community of
Thessaloniki. Haloperidol utilization was also considerable.
The percentage of generics in antipsychotics sales was high
(considering Greek practices) even for some of the newest
antipsychotics. These results reflect the impact of measures
for decreasing medical costs in the years of financial crisis in
Greece, and show that psychiatrists try to contain the medical
cost within health expenses.

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