Reimbursement of targeted cancer therapies within three different European healthcare systems

J. Mihaljovic, C. Dolk, T. Kolley, S. Simoens, M. J. Postma

University of Groningen, Groningen, The Netherlands; Mihaljovic Health Analytics, Novi Sad, Serbia; Tolley Health Economics Ltd, Buxton, United Kingdom; KU Leuven, Leuven, Belgium.

Background

- Targeted cancer therapies (TCT) are drugs that specifically act on molecular targets within the cancer cell causing its regression and/or death. Although TCT showed clinically important gains in survival within the indications that did not see any improvements in past, they also came at considerable cost.
- Different policies in drugs’ pricing and reimbursement among European countries that were applied to address this issue resulted in significant imbalances in TCT access. To demonstrate these inequities we examined three distinctive systems in Europe: the Serbian, Scottish and Dutch.
- The assessments of new drugs in Serbia are performed by the National Health Insurance Fund (NHIF). Additionally to the common requests for clinical efficacy, the cost-utility and budget impact analyses (CUA and BIA) are obligatory part of this process. However, more details on their content or reports of previous assessments are not publicly available.
- In Scotland, drug assessments are conducted by the Scottish Medicines Consortium (SMC) which examines a drug’s clinical value and cost effectiveness (CE). A drug is generally considered cost effective if its incremental CE ratio (ICER) falls below £30,000/QALY. The SMC recognises certain decision modifiers that can enable a positive recommendation despite otherwise unacceptable ICER.
- The National Health Institute of the Netherlands (NHNIL) evaluates efficacy and CE of new health technologies within the country. As for the CE assessment, a positive decision depends rather on correctness of the methodology applied than on the specific ICER reached. Two recent policies facilitate reimbursement of expensive hospital drugs and thus can be applied to TCT: the Policy Rule for Expensive Hospital and Orphan Drugs (PREHO) and updated fast access PREHO (UFAP). They both exempt certain hospital drugs from full CE evaluation (permanently or contemporarily).

The aim of this work was to identify differences in the recommendations for TCT in Serbia, Scotland and the Netherlands and to examine the role of a CE evaluation in such recommendations.

Methods

- In order to illustrate main differences of respective healthcare systems, we firstly presented a number of structural parameters for Serbia, Scotland and the Netherlands related to population, cancer epidemiology and basic healthcare funding parameters.
- A list of currently approved TCTs cited from the European Medicines Agency (EMA) was cross-referenced with the drug reimbursement reports issued by NHIF (for Serbia), SMC (for Scotland) and NHNIL (for the Netherlands). The following key variables were gathered from the reports: drug indication, registration status, reimbursement status and outcome of the CE evaluation.

Results

Table 1 presents populations, cancer epidemiology and healthcare funding parameters for Serbia, Scotland and the Netherlands.

<table>
<thead>
<tr>
<th></th>
<th>Serbia</th>
<th>Scotland</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population size</td>
<td>8,960,500</td>
<td>5,327,700</td>
<td>172,849</td>
</tr>
<tr>
<td>Cancer incidence</td>
<td>343 / 100,000</td>
<td>125,815 / 100,000</td>
<td>8,913 / 100,000</td>
</tr>
<tr>
<td>Healthcare funding</td>
<td>€720,000</td>
<td>€22,802</td>
<td>€172,849</td>
</tr>
</tbody>
</table>

We identified 41 TCT approved for 70 cancer indications by the EMA (list of all TCT as well as their reimbursement statuses and CE evaluations are given in Table 2).

Out of total number of TCT per indication (TCTi), 20 (28%) were reimburded in Serbia, 25 (36%) were either not submitted or rejected by the NHIF (due to the lack of evidence it could not be differenced between these two statuses). Equal number of TCTi (25;36%) were not registered in Serbia. None of assessment reports was publicly available.

Scottish SMC positively assessed 26 TCTi (37%) and rejected as much as 30 TCTi (43%). Among rejected submissions 18 TCTi were negatively assessed after manufacturer applications, while 12 TCTi were assessed by SMC without prior application. The rest of TCTi (14-20%) were not submitted or not yet considered by SMC. For accepted drugs, calculated ICER ranged from £1,790 to £56,343/QALY and for rejected from £22,445 to £376,475/QALY. High ICER was reason for disapproval in 16 of 18 rejected submissions. Decision modifiers were applied in 6 of 26 accepted TCTi.

Finally, the Dutch NHINL accepted total of 60 TCTi (86%) and disapproved use of only 1 TCTi (1%). The majority of reimbursed drugs were accepted and exempted from CE evaluation in accordance with PREHO policy (39), while other approved TCTi complied to UFAP (21). Remaining TCTi (9;13%) were not yet assessed. Among all submissions, only 10 submitted full CE evaluations with ICER varying from €6,412 to €164,262/QALY.

Conclusions

- Reimbursement statuses of TCT significantly differ in three examined healthcare systems. Level of CE assessment within TCT evaluation procedures seem to largely affect final reimbursement decisions.
- While in the Netherlands there are special policies which enabled fast access for 98% TCTs that applied for reimbursement, clear definition of CE threshold and strict requirement for full CE assessment in Scotland led to acceptance of only 46% of TCTs’ submissions.
- More precise pharmaco-economic guidelines are still to be designed for TCTs’ reimbursement in Serbia. Guidelines must account for specific epidemic and economic conditions of the country and could draw on the experiences of Scotland and the Netherlands.