Background

RA is a chronic disease, affecting over 200,000 people in Poland, 56% of whom are in productive age (20-64 years) and unequivocally restricting their activities, leading to relatively rapid impairment or premature death. Over last 10 years several innovative health technologies were introduced for RA treatment. As the clinical data show, these new solutions alter the course of disease by delaying the decline in physical fitness of patients, therefore likely influencing the indirect cost.

Methods

Costs categories, cost of illness analysis
Costs can be defined as the values of all charges (burden) related to the course of disease and its treatment. All costs eligible for monetary estimation can be classified as direct (expenditures directly related to a disease and applied therapy, such as medicines and medical services) and indirect (lost resources due to the disease and its implications). Moreover, the third category of unquantifiable nature is also distinguished and called intangible cost.

Legitimacy and possibilities of indirect cost assessment depend on the goal of particular analysis. Here we present results of cost-of-illness analysis. Cost-of-illness analysis is the type of analysis, which focuses on the assessment of complete economic burden generated by a disease in respect to various perspectives. The inclusion of indirect cost has a great informative value. Perspectives used in the analyses ought to be widest possible, and also describe the disease implications from standpoint of public payer, and when feasible - of public finances and society.

Indirect cost assessment

In case of the indirect cost inclusion as the economic burden, two methods could be applied: human-capital or friction-cost. The entire potential societal loss due to restraints in utilization of human capital owing to the disease occurrence is evaluated with the human capital method. Fundamental limitation of this method in analysis taking the societal perspective lies in the built in assumption of no institutional unemployment (marginality). It means that the individual lost from labor market cannot be replaced by another individual in the bargaining-free (no friction) manner from the societal perspective. Under the human-capital method, it is assumed that indirect costs owing to lost productivity are generated constantly till the upper age limit of productivity valuation in analysis performed from societal perspective.

In the friction-cost method prevails the assumption that lost productivity of worker imposes the burden on society to the extent of the appearing, unfilled gap. In particular in case of long term absence at work, the social cost is generated till the moment of introducing the substitute for a worker who left a position (e.g. due to retirement or death).

Criticism towards this method relies on arguments such as lack of satisfactory theoretical economic underpinnings, as well as the relations constructed on its assumptions are not observable in practice (e.g. decrease in working time does not translate into the decline of employment).

The direct cost related to RA from public payer’s perspective amounted to 425 million PLN. The largest part in the direct cost had pharmaceutical treatments (mainly biologics) reaching almost 55%, while hospitalization nearly 22%. The remaining cost categories were: primary healthcare cost (7%), specialist outpatient cost, hospital procedures under medicines programs, spa treatments (4% each), rehabilitation (3%) and care and nursing benefits (1%). The societal benefits, offered to RA patients by SLI, not the public payer’s budget, accounted for another 200 million PLN.

The burden of disease from the societal perspective was also high. The costs calculated with FC method amounted to 1.2 billion PLN and are twice as low as the costs calculated with the HC method (2.8 billion PLN). The cost of short term absenteeism (sick leaves) amounted to 577 million PLN, and the cost of informal care 251 million PLN. The long term absenteeism cost (work disability) varied from 9 million PLN (FC) to 1554 million PLN (HC).

Table 1. Basic description of cost of illness analysis

<table>
<thead>
<tr>
<th>Cost of illness analysis</th>
<th>Goal</th>
<th>Application</th>
<th>Types</th>
<th>Perspective</th>
<th>Time horizon</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>• To assess economic impact of a disease</td>
<td>• Based on the potential medical condition in the population</td>
<td>• Most often broad - public payer/public finance, societal</td>
<td>• Most often from one year onward, possible analyses with longer time horizons</td>
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<td>• To compare the costs under different medical conditions</td>
<td>• Basic medical condition</td>
<td>• After healthcare expenditure</td>
<td>• Hospitalization (HC), other (FC)</td>
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<td>• To assess the most costly areas associated with the disease</td>
<td>• Base on marginal productivity</td>
<td>• Public payer</td>
<td>• Public payer expenditures</td>
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<td>• To measure the real economic benefit is hypothetical shadow of future consumption</td>
<td>• Friction-cost method</td>
<td>• Social benefits</td>
<td>• Social benefits</td>
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</tbody>
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References