New strategies in the treatment of rheumatoid arthritis patients in Italy: a budget impact analysis

Background

Rheumatoid Arthritis (RA) management imposes a severe economic burden in terms of both direct sanitary costs and societal costs linked to productivity losses and quality of life (QoL) impairment. In Italy, 3/7 of the total costs are indirect, both direct and indirect costs increase with disease progression.

Objective

To evaluate the impact on Italian National Health Service (INPS) budget of the introduction of RTX and ABAT in the treatment of RA patients not adequately responding to anti-TNF-α therapies.

Methods

The study is based on a budget impact model, developed with MS Excel, simulating the sequence of treatments of a cohort of RA patients who already failed a first-line biologic (anti-TNF-α) drug. The time horizon of the analysis is 10 years. Three strategies are analyzed and compared:

- Baseline strategy: biological second- and third-lines are based on an anti-TNF-α.
- Innovative strategy (7.7% year -1 ): a fraction of patient in active treatment with RTX uptake is treated with RTX before switching to the second anti-TNF-α and eventually proceeding according to the baseline strategy (RTX as a new biologic line, on top of the baseline strategy).
- Innovative ABAT-based strategy: same as above, but with ABAT instead of RTX.

In the model, each strategy is formed by several biologic therapeutic lines, the patient switches to the next therapy when the current one is no longer effective or tolerated: At the end of the first active treatments sequence (S1DMARD) the patient has no other option than switching to palliative treatment with methotrexate alone. The uptake of RTX and ABAT has been assumed of 16% in the first year, 50% at year 5 and 100% at year 10. The time a patient spends with a treatment before switching to the next depends on the specific drug and on the line of treatment.

In the absence of an Italian register of RA patients treated with biologic drugs, the average time in treatment for anti-TNF-α drugs derived from the Spanish database (BIOBADASER). The data reporting the average time in treatment with RTX and ABAT has been found, as the average value of the anti-TNF-α drugs used as a first biologic line in BIOBADASER was used.

As for the model of the study, the model is incident and open, so that each year incident patients enter the model and stay there until death. RA patients entering the model are those eligible to second-line biologic treatments. This number has been evaluated based on the estimated prevalence of RA in Italy (0.6%), the share of RA patients treated with first anti-TNF-α (0.15%) and the annual rate of treatment interruption from BIOBADASER (11.2% with INFL, 7.4% with ETAN and 10.4% with ADAL).

The death rate has been measured from the mortality tables of the national Institute of health and the total Italian population multiplied by the relative risk specific of the disease (0.23, from a large Swedish population study).

Only direct medical costs were considered, including drug acquisition, administration, incident premedication and monitoring tests and analgesics.

Results

The model estimated a number of RA Italian patients of 272,000. Among them, about 3,900 are in treatment with INFL as first anti-TNF-α and 1,540 with ETAN (7.4% year -1 ; 7.7% year -2 ; 11.2% year -3 ; 15.4% year -4 ; 18.9% year -5 ; 21.7% year -6 ; 23.6% year -7 ; 25.0% year -8 ; 25.8% year -9 ; 26.1% year -10 ) and the ABAT strategy (+11.6% year 1; +17.4% year 5; +29.1% year 10).

Innovative ABAT-based strategy: same as above, but with ABAT instead of RTX.

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Sponsorship

This study was supported by Roche Italia.

Conclusions

The introduction of new therapies in the treatment of Italian RA patients represents a valuable option. The use of RTX is expected to induce a reduction in costs while ABAT will probably produce an increase. However, RTX, given a definite budget, seems to allow the management of a larger number of patients than the other two strategies, thus improving the quality of care.

These results are preliminary, as more detailed data on population and observed costs are needed.

References