The Health Technology Reports Series has been by the Department of Public Health, University of Tartu.

Effectiveness and costs of treatment strategies in patients with multiple myeloma

Summary

Objectives: To compare the costs and clinical effectiveness of multiple myeloma treatment strategies (current formal care vs new treatments – bortezomib, thalidomide and lenalidomide) and to evaluate budget impact of the new treatment strategies to Estonian Health Insurance Fund.

Methods: A literature search on the effectiveness, safety and cost-effectiveness of the medicines was conducted in June and August 2013 based on the PubMed and Cochrane Database of Systematic Reviews databases. Studies were selected using predefined selection criteria. For effectiveness and safety, 64 articles met the inclusion criteria. Of these, 8 meta-analyses which gave the most valuable information for answering research questions were included in the report. For cost-effectiveness, 2 studies met the criteria and were discussed in the report.

To assess the current costs of multiple myeloma treatments, the data of costs and turnover were obtained from the State Agency of Medicines. The incidence of new multiple myeloma cases was received from the Estonian Cancer Registry.

Results: The literature review shows that in patients eligible for autologous stem cell transplantation (ASCT), the VAD treatment scheme is less effective than new treatment schemes (including bortezomib and thalidomide). The median progression-free survival with the VAD scheme was 25–30 months and with new schemes, 26–38 months. ASCT ineligible patients currently used the MP and MPT schemes and had progression-free survival of 9–18.5 months and 13–27.5 months respectively. The new VMP scheme had progression-free survival of 24 months. Among maintenance treatment schemes, thalidomide was compared with lenalidomide and observation (no schemes used). Thalidomide had an overall survival gain of 8–27% and lenalidomide 8% compared to observation. The cost-effectiveness results in the sources showed that the VMP scheme (compared to MP, MPT and MPR-R) and MPT (compared to MP, VMP and CTDa) were the most cost-effective. Incremental cost per QALY in VMP was €44,262 and for MPT, €10,583 in comparison with the MP scheme.

When analysing the budget impact to Estonian Health Insurance Fund, schemes using bortezomib in all patients as the first line treatment would create a €2.3 million additional cost. If bortezomib schemes were given to all ASCT eligible patients as the first line and to ASCT ineligible patients as the second line treatment after the MPT scheme, additional costs were €1.9 million for the whole patient cohort. The cost-effectiveness of myeloma treatment strategies was assessed in a simplified way – ICER was calculated per progression-free life-year. ICER per one progression-free life-year was €107,993 if all patients were given schemes using bortezomib, and €72,885 if bortezomib schemes were given to all ASCT eligible patients as the first line and as the second line to ASCT ineligible patients.

Conclusions: New myeloma treatments are more effective than the current treatment with old schemes, but also create additional costs. However, based on evidence from literature, new medicines (bortezomib) should be added to first and second line treatment of multiple myeloma.

Reference: Männik A, Lutsar K, Kaare A, Kasak K, Kiivet R-A. Müeloomtõve ravistrateegiate efektiivsus ja kulutõhusus. Tartu: Tartu Ülikooli tervishoiu instituut; 2013.