

The Health Technology Report Series has been developed by the Institute of Family Medicine and Public Health, University of Tartu.

## Ranolazine for treatment of stable angina.

### Summary

**Objectives:** To describe the efficacy and cost-effectiveness of ranolazine, to analyse the use and cost-effectiveness of ranolazine added to standard treatment for stable angina in Estonia, and to estimate the budgetary impact of ranolazine on the Estonian Health Insurance Fund.

**Methods:** Literature reviews on the efficacy, safety and cost-effectiveness of ranolazine were conducted. The use of medicines, treatment compliance and treatment costs of angina patients have been analysed using the databases of the Estonian Health Insurance Fund. In the cost-effectiveness analysis we compared use of ranolazine added to standard treatment with the standard treatment alone using the Markov model based on Estonian data. A budget impact analysis for the period 2018–2022 was carried out.

**Results:** Beta blockers and/or calcium channel blockers are recommended for the first-line control of stable angina. Long-acting nitrates, ivabradine or ranolazine will be added to the treatment as the second-line treatment. The use of trimetazidine is a recommendation of the lower class. Ranolazine, ivabradine, trimetazidine and long-acting nitrates added to the standard treatment for stable angina improve exercise tolerance and mitigate subjective complaints. There is no clear evidence found about differences in efficacy or safety between the second-line medicines. No effect is presented on improvement of cardiovascular prognosis. ICER varied from EUR 4,202 to USD 32,682 per QALY in cost-effectiveness studies of ranolazine. The cost of ranolazine has been the most important characteristic that affects ICER.

Estonian patients with angina have used mostly first-line medicines; thereby beta blockers were more commonly used than calcium channel blockers. The most common was the use of first-line medicines together with second-line medicines, and less common was the use of first-line medicines or second-line medicines only. Long-acting nitrates and trimetazidine were the most often used second-line medicines. The compliance to first-line medicines was better than the compliance to second-line medicines.

The average annual cost of standard treatment for stable angina patients is €2,380. Adding ranolazine to standard treatment, the total annual cost will increase by 317 euros. Ranolazine allows a gain in quality of life of 0.037 QALY. The ICER of use of ranolazine added to standard therapy is €8,543 per additional QALY as compared with standard therapy alone. According to sensitivity analysis scenarios, ICER ranges from 2,422 to 21,833 euros per gained QALY. The cost of ranolazine was the most important factor affecting the ICER. Adding ranolazine to the list of reimbursed medicines will increase the total expenditures of the Health Insurance Fund by 377,789 – 1,106,859 euros by 2022.

**Conclusions:** There are several other active substances available in Estonia that have comparable effectiveness to ranolazine, and the cost of treatment is significantly lower with those than with ranolazine.

**Citation:** Rooväli L, Elmet M, Lotman E-M, Lutsar K, Võrno T. *Ranolasiin stabiilse stenokardia ravis*. Tartu: Tartu Ülikooli peremeditsiini ja rahvatervishoiu instituut; 2017.