Economic assessment of eltrombopag in the treatment of thrombocytopenia in Italy

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Background. According to WHO estimates, about 3% of the global population have a chronic hepatitis C virus infection (HCV) [1]. Thrombocytopenia is one of the most common complications of HCV and an obstacle to possible treatment with antiviral therapy. Studies [2] demonstrate that eltrombopag produces an increased platelet count in antiviral therapy (AVT) candidate thrombocytopenic patients, allowing an increase in the sustained virologic response (SVR).

Objective. This study aims to estimate the cost-effectiveness ratio of eltrombopag in the treatment of HCV-related thrombocytopenia in antiviral candidate patients.

Methods. Cost-utility analysis was carried out from the Italian National Health Service perspective through a Markov model (Fig.1), with a lifetime horizon and one-year cycles, based on the registered clinical trials [2]. Three alternatives were considered: 1) eltrombopag treatment in both the enabling phase and during AVT; 2) no eltrombopag and no AVT; 3) no eltrombopag and subsequent administration of a reduced dose of peg-IFN. Costs and effectiveness data were derived from literature and discounted by 3.5%. Both deterministic and probabilistic sensitivity analyses were performed.

Results. The ICER of scenario 1 vs 2 was €30,020.94/QALY and €32,752.44/QALY when scenario 1 was compared with scenario 3. The one-way sensitivity analysis showed that the most sensitive parameter was the discount rate.

Considering a cost-effectiveness threshold of €40,000/QALY, the probabilistic sensitivity analyses showed that scenario 1 was cost-effective in 80% of simulations compared with scenario 2 and in 90% of cases compared with scenario 3.

Conclusion. The use of eltrombopag in HCV patients with thrombocytopenia is cost-effective. Further research should explore the cost-effectiveness of eltrombopag in sofosbuvir candidate patients.

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Key references