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Title **Interferon Alfa (Pegylated and Non-Pegylated) and Ribavirin for the Treatment of Mild Chronic Hepatitis C: A Systematic Review and Economic Evaluation**

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Aim

To assess the clinical and cost effectiveness of pegylated interferon alfa (PEG) and nonpegylated interferon alfa (IFN) and ribavirin (RBV) in treating adults with histologically mild chronic hepatitis C infection.

Conclusions and results

Eight randomized controlled trials (RCTs) of antiviral treatment in mild hepatitis C virus (HCV) were identified and included. The RCTs were generally of good quality, and the results suggested that effectiveness (particularly with respect to sustained virological response) was similar in patients with mild disease to the results obtained in patients with moderate/severe disease. This finding was supported by a set of 11 RCTs of patients with mild/moderate/severe HCV which reported the results for mild HCV subgroups. The authors' cost-effectiveness analysis showed that early treatment compared with watchful waiting is associated with quality-adjusted life-year (QALY) gains, but with increased treatment costs. Base-case incremental costs per QALY for 48 weeks of treatment are: watchful waiting with IFN + RBV versus best supportive care (GBP 3097–6585); early treatment with IFN + RBV versus watchful waiting with IFN + RBV (GBP 5043–8092); watchful waiting with PEG 2a + RBV versus best supportive care (GBP 3052); early treatment with PEG 2a + RBV versus watchful waiting with PEG 2a + RBV (GBP 5900); watchful waiting with PEG 2b + RBV versus best supportive care (GBP 2534); and early treatment with PEG 2b + RBV versus watchful waiting with PEG 2b + RBV (GBP 5774). These results were consistent with previous assessments.

Recommendations

This systematic review and economic evaluation show that patients with histologically mild HCV can be successfully treated with both pegylated and nonpegylated interferon alfa. Early treatment and watchful waiting strategies are associated with acceptable cost-per-QALY estimates. Research needs to be directed toward newer, potentially more effective interventions, particularly those that improve treatment response in patients with genotype 1, with minimal adverse effects.

Methods

A systematic review and an economic evaluation were conducted. A sensitive search strategy was designed and applied to several electronic bibliographic databases up to July 2005. Manufacturer and sponsor submissions to NICE were searched. The trials were reviewed in a narrative synthesis, but meta-analysis was not undertaken due to heterogeneity in the interventions and comparators evaluated. A Markov state transition model was developed to estimate the cost effectiveness of treatment strategies for adults with mild chronic HCV, from the perspective of the NHS and personal social services. The model includes 8 health states through which a cohort of patients pass at different rates. A lifetime horizon was employed (1-year cycle). Published quality of life weights were taken from a UK RCT to derive QALYs. Transition rates through the health states were estimated from the literature. Costs and resources were estimated from published literature and clinical opinion. The cost year was 2003/2004. Costs were discounted at 6% and benefits at 1.5%. Uncertainty in assumptions and parameters was investigated through probabilistic and deterministic sensitivity analyses.

Further research/reviews required

Further research is required: on the natural history of HCV (to estimate better the rate of liver disease progression); and on the effectiveness of noninvasive biochemical markers of liver disease (as an alternative to liver biopsy).

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