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Title **Granulocyte-Colony Stimulating Factor for Antiviral-Associated Neutropenia: Systematic Review and Economic Evaluation**

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Aim

To evaluate the clinical efficacy, safety, and cost effectiveness of G-CSF (filgrastim or pegfilgrastim) in treating antiviral-associated neutropenia in adults with hepatitis C.

Conclusions and results

The clinical review did not show a superiority of granulocyte-colony stimulating factor (G-CSF) versus pegylated interferon dose reduction for achieving a sustained virological response (SVR). The administration of G-CSF may enable patients to stay on or resume optimal antiviral therapy compared with patients who receive a reduced pegylated interferon dose, but the evidence that this improves outcomes is weak. At baseline values, G-CSF compared with pegylated interferon dose reduction may be perceived as cost effective if decision makers pay $7785 for a QALY. Given the weak clinical data it may be premature to conclude that G-CSF compared with pegylated interferon dose reduction is cost effective.

Recommendations

Not applicable.

Methods

A systematic review was conducted to identify controlled trials and observational studies that assessed the effect of G-CSF or dose reduction strategies to control neutropenia in treatment-naïve adults with hepatitis C being treated with combination interferon and ribavirin. The outcomes were neutrophil count, early virological response, SVR, health-related quality of life, complications, and adverse effects of G-CSF. Data were summarized using descriptive statistics. In addition, cost-effectiveness and cost-utility analyses were conducted to evaluate the cost effectiveness of G-CSF compared with pegylated interferon dose reduction strategies.

Further research/reviews required

There are knowledge gaps regarding the treatment of neutropenia in patients with hepatitis C. Future research should provide reliable clinical and economic information to determine more clearly how these patients should be treated.

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