Review: Interferon α-2b is effective for biochemical and virologic outcomes in acute hepatitis C virus infection

Poynard T, Regimbeau C, Myers RP, et al. **Interferon for acute hepatitis C.** Cochrane Database Syst Rev. 2002;(1):CD000369 (latest version 19 Jul 2001).

QUESTION

In patients with acute hepatitis C virus (HCV) infection, what is the effectiveness of interferon?

DATA SOURCES

Studies were identified by searching MEDLINE (January 1966 to June 2001), the Cochrane Controlled Trials Register, abstracts of the American Association for the Study of Liver Diseases (1995 to 2000), and bibliographies of relevant studies. Pharmaceutical companies were contacted for unpublished trials.

STUDY SELECTION

Studies in any language were selected if they were randomized controlled trials that compared interferon with placebo or no treatment; examined patients with acute HCV infection; and included ≥ 1 of normalization of alanine aminotransferase (ALT) activity at the end of treatment (biochemical end treatment response [ETR]), sustained ALT normalization at the end of follow-up (biochemical sustained response [SR]), disappearance of serum HCV RNA by polymerase chain reaction assay at the end of treatment (virologic ETR), or disappearance of serum HCV RNA at the end of follow-up (virologic SR). Studies were excluded if patients had had liver transplantation or were coinfected with the hepatitis B virus or HIV.

DATA EXTRACTION

Data were extracted independently by 2 reviewers on study design and quality, participants, interventions, and outcomes.

MAIN RESULTS

18 trials of interferon therapy in patients with acute HCV were identified, and 6 (206 patients) were included in the review. 4 trials (141 patients, all with transfusion-acquired acute HCV) showed that interferon α-2b was associated with greater rates of biochemical ETR and SR and virologic ETR and SR than no treatment (Table). Results of 2 trials (65 patients) of interferon β conflicted and were limited by small sample sizes. Data on adverse events are lacking.

CONCLUSIONS

In patients with transfusion-acquired acute hepatitis C virus infection, interferon α-2b is effective in improving biochemical outcomes and achieving sustained virologic clearance. Data on adverse events are lacking.

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Interferon α-2b vs no treatment in acute hepatitis C virus (HCV) infection*

Outcomes (follow-up)	Weighted event rates		RBI (95% CI)	NNT (CI)
	Interferon	No treatment		
Biochemical ETR (3 mo)	75%	30%	150% (69 to 270)	3 (2 to 4)
Biochemical SR (9 to 15 mo)	54%	25%	113% (34 to 238)	4 (3 to 8)
Virologic ETR (3 mo)	42%	4%	746% (174 to 2507)	3 (2 to 4)
Virologic SR (9 to 15 mo)	32%	4%	544% (100 to 1970)	4 (3 to 7)

*Biochemical ETR = normalization of alanine aminotransferase (ALT) activity at end of treatment; biochemical SR = sustained ALT normalization at end of follow-up; virologic ETR = disappearance of serum HCV RNA by polymerase chain reaction assay at end of treatment; virologic SR = disappearance of serum HCV RNA at end of follow-up. Other abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article using a fixed-effects model.

COMMENTARY

Most patients who are identified with HCV infection have chronic infection acquired years or decades ago. Acute HCV infection is often unrecognized, and its incidence is decreasing. However, approximately 85% of patients with acute HCV infection develop chronic infection (1). In the chronic stage, younger age, less fibrosis, and lower viral load predict a virologic response to interferon therapy. Viral diversity and interferon resistance may correlate with the duration of infection. It is attractive to speculate that early antiviral therapy may lead to improved virologic responses to treatment, but management of acute HCV infection remains problematic.

Impressive virologic response rates of 98% to 100% are reported from case series of patients with acute HCV infection treated with interferon (2, 3), but this meta-analysis by Poynard and colleagues found an end-treatment virologic response rate of only 42%. Acute HCV infection is seldom recognized, and controlled studies are so difficult to do that few have been published. This meta-analysis provides only a little more new information than the 2 previous meta-analyses of the treatment of acute HCV infection published 5 years ago (4, 5).

Current Centers for Disease Control and Prevention guidelines recommend testing for ALT and anti-HCV at baseline and 4 to 6 months after a known percutaneous exposure to HCV. They do not recommend early antiviral treatment, but state "if earlier diagnosis is desired, testing for HCV-RNA may be performed at 4 to 6 weeks" (1). The uncertainty in this guideline is appropriate. Reliable recommendations on the treatment of acute HCV infection must await larger, randomized trials.

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