



Therapeutic Effect of Granulocyte Colony-Stimulating Factor Therapy In Cirrhosis: A Meta-Analysis of Randomized Controlled Trials

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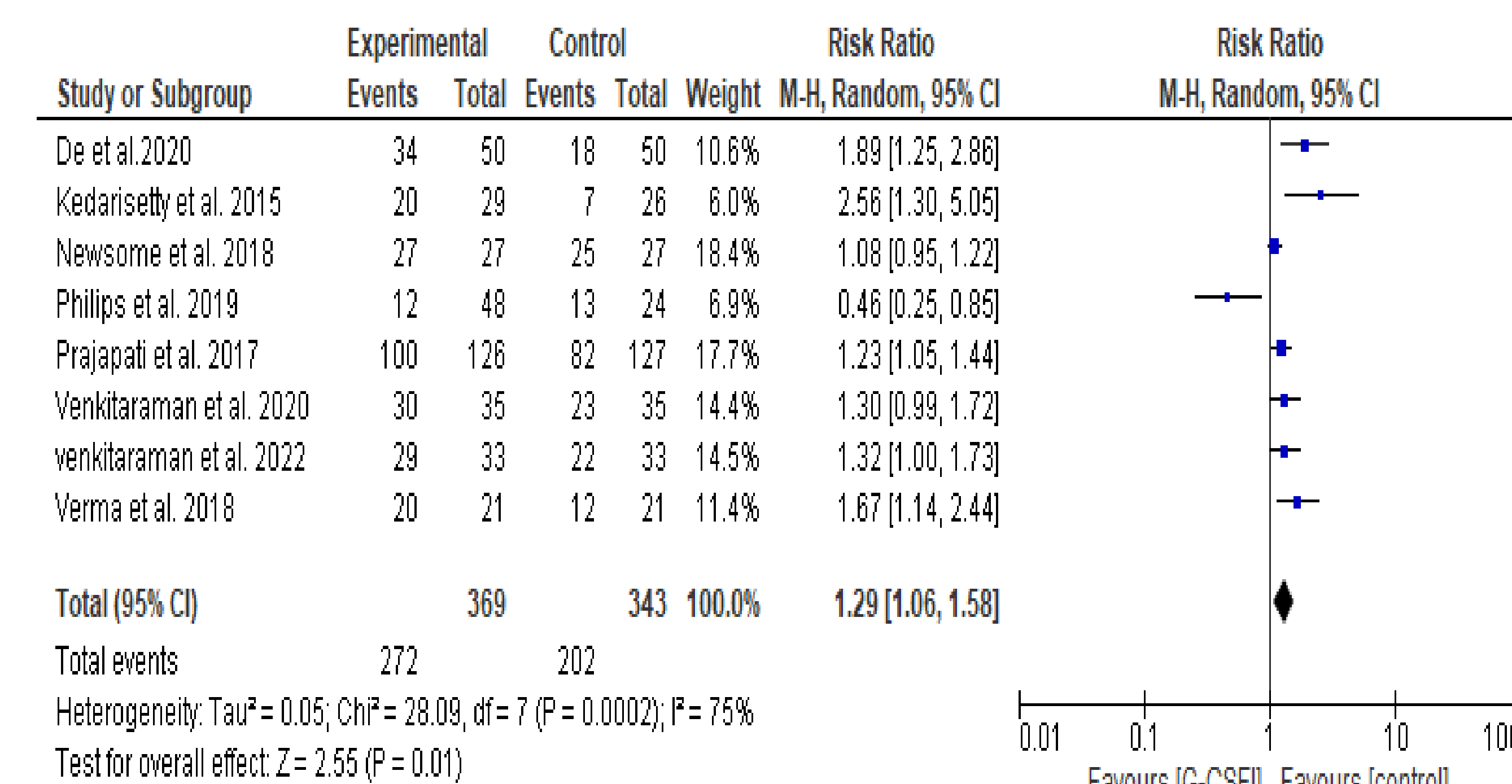
Background

- Decompensated cirrhosis is an advanced stage of cirrhosis in which liver scarring becomes so extensive that the liver is unable to function properly, leading to complications such as refractory ascites, recurrent infections, and hepatic encephalopathy.
- Currently, liver transplantation is the only definitive treatment, but it has a number of disadvantages, including high cost, restricted donor pool, and long-term immunosuppression.
- As a result, granulocyte colony stimulating factor (G-CSF) has emerged as an alternative therapy. However, its clinical efficacy is still debatable, so the aim of this meta-analysis was to determine the efficacy of G-CSF in patients with decompensated and compensated cirrhosis.

Methods

- MEDLINE and SCOPUS were queried from inception till June 2022 for randomized controlled trials (RCTs), without any restriction.
- RCTs evaluating effects of G-CSF on survival rates and occurrence of infection in patients with Cirrhosis were incorporated.
- The results were reported using a random-effects meta-analysis and the Mantel-Haenszel risk ratio (RR). The Subgroup analysis was done to investigate the influence of study-level factors such as study setting, population and etiology on the outcomes of interest.

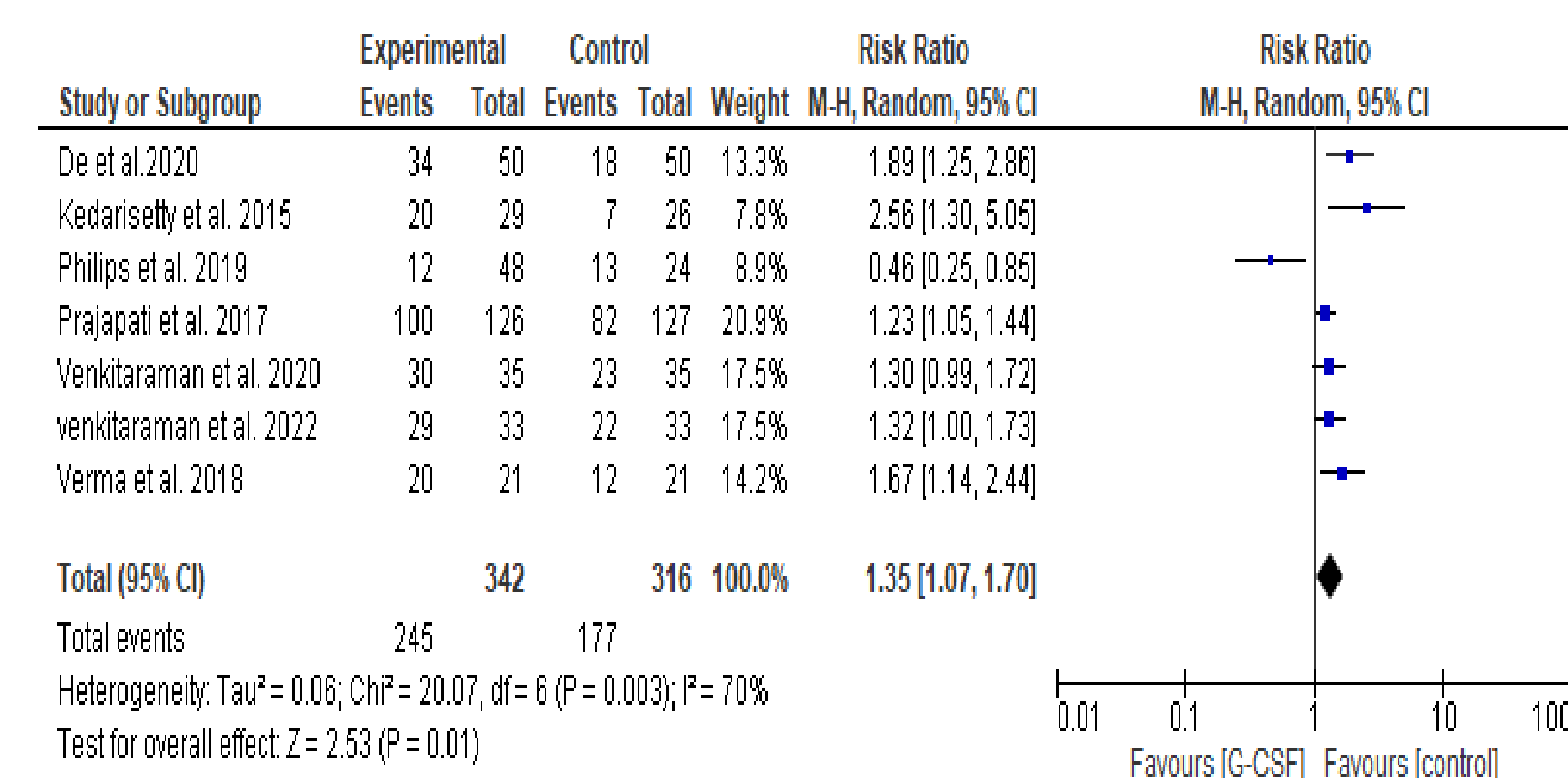
Figure 1: Survival rate in patients with compensated cirrhosis and decompensated cirrhosis



Results

- Eight studies (n = 8) were included in our meta-analysis. The total number of participants in our study was 712, and the median study duration was 12 months. Our pooled analysis demonstrates that G-CSF treatment did not improve survival rates (RR 1.29; 95% CI 1.06 to 1.58; p = 0.01; **Figure 1**) in patients with compensated cirrhosis and decompensated cirrhosis.
- In our subgroup analysis, G-CSF was also linked to lower survival rates among people with decompensated cirrhosis (RR 1.35; 95% CI 1.07 to 1.70; p = 0.01; **Figure 2**).

Figure 2: Survival rate in patients with decompensated cirrhosis



CONCLUSIONS

- Our findings indicate that G-CSF therapy is not beneficial in improving survival rates and does not reduce the risk of infection in patients with Cirrhosis