Efficacy and safety of direct-acting antiviral therapy for hepatitis C in the elderly: a systematic review and meta-analysis

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EASL European Association for the Study of the Liver

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INTRODUCTION

Historically, age has been a major limitation of interferon-based antiviral therapy for hepatitis C (HCV) due to poor tolerability, reduced efficacy and an increasing number of comorbidities. Since the introduction of direct-acting antivirals (DAAs), HCV treatment has been revolutionized and high sustained virologic response (SVR) rates can now be achieved in virtually all patient populations, even in those earlier considered difficult-to-treat.

AIM

Aim of this systematic review and meta-analysis was to assess and compare the efficacy and safety of DAA therapy among elderly (≥65 years or ≥75 years) and younger (<65 years or <75 years) patients with chronic HCV infection.

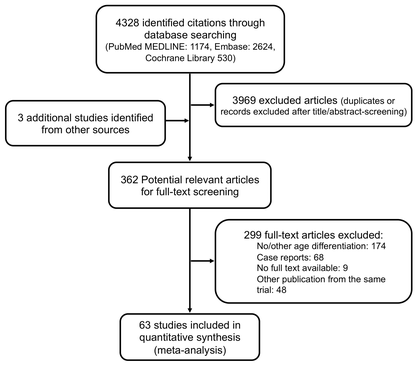
METHOD

For this systematic review and meta-analysis, the PubMed MEDLINE, Embase and Cochrane databases were searched through July 2018. Two independent researchers extracted data and assessed quality and risk of bias. All phase 3 trial or post marketing studies were eligible for inclusion. The primary outcome was efficacy of DAA therapy with respect to age (<65 versus ≥65 years). To account for different study populations between studies and heterogeneous study designs/ protocols risk ratios (RRs) for non-SVR were calculated using random and fixed effect models and group comparison were performed. This study was registered with PROSPERO (CRD42018104392).

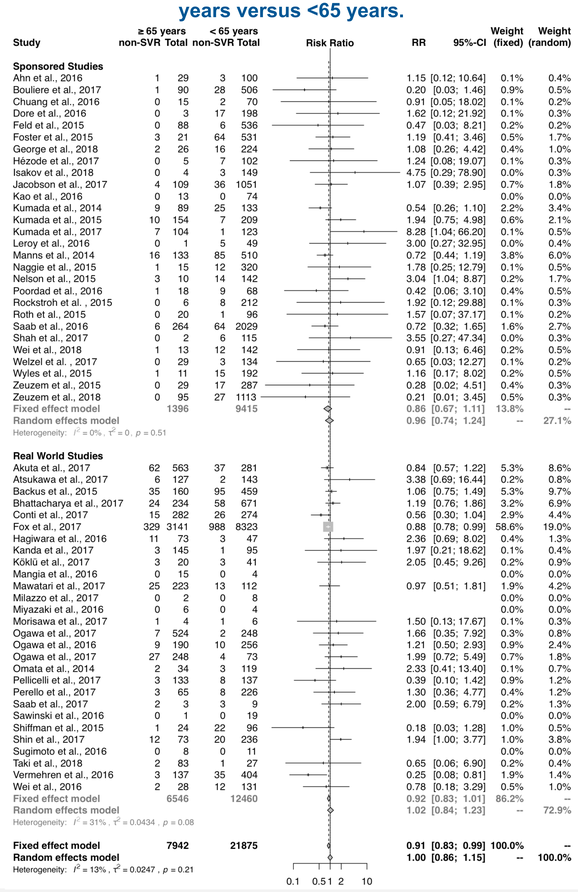
RESULTS

Overall, we identified 63 studies including 34,082 patients treated with different DAAs. Risk for non-SVR was comparable in patients <65 and ≥65 years of age (RR 1.00, 95% CI 0.86-1.15;p=0.979) and even lower in a subgroup analysis of cirrhotic patients ≥65 years of age (RR 0.59, 95% CI 0.35-0.99,p=0.044). Risk for non-SVR was similar between age groups in all other subgroup analyses. Elderly patients had a significantly increased risk of adverse events (RR 1.30, 95% CI 1.11-1.52,p=0.001), but not for serious adverse events (p=0.43) or treatment discontinuation (p=0.15). Risk for anemia if treated with additional ribavirin was 2.84 (95% CI 1.73-4.66,p<0.001) in elderly patients compared to patients <65 years.

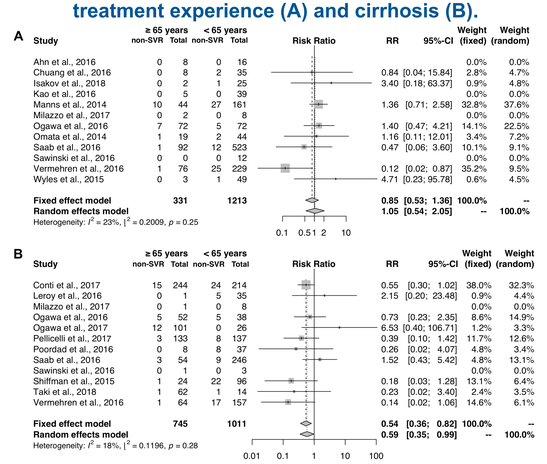
Summary of search results and study selection.



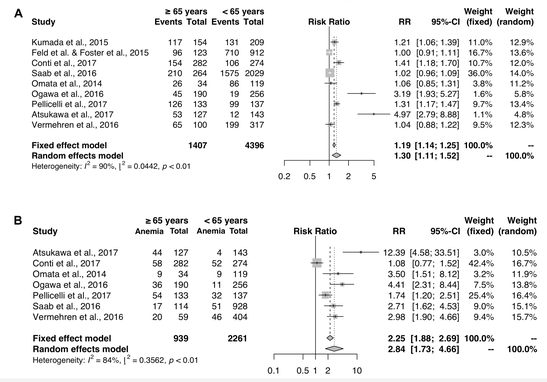
Overall risk ratio analysis for non-SVR in patients ≥65 years versus <65 years.



Subgroup analysis for non-SVR in patients with treatment experience (A) and cirrhosis (B).



Risk ratio for adverse events overall (A) and for anemia in patients receiving ribavirin (B).



CONCLUSIONS

Our results show that DAAs are highly effective and safe in elderly patients. Ribavirin should be avoided in the elderly, as more AEs, and particularly anemia is observed. Further cost-effectiveness analyses are needed to evaluate the socio-economic benefit of treating elderly people without advanced liver disease.

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