Cardiac Harms of Sofosbuvir: Systematic Review and Meta-Analysis

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Abstract

Introduction

Sofosbuvir is a new direct-acting pyrimidine nucleotide analogue antiviral drug that has shown remarkable efficacy in the treatment of hepatitis C in clinical trials. However, observational anecdotal data have recently suggested an increased risk of serious bradycardia among patients treated with sofosbuvir and amiodarone.

Objective

We aimed to estimate and characterize the cardiac safety of sofosbuvir by performing a systematic review of randomized controlled trials (RCTs).

Methods

We conducted a systematic review of RCTs (PROSPERO 2016: CRD42016033109) comparing sofosbuvir and non-sofosbuvir regimens in patients with chronic hepatitis C by searching the MEDLINE, Embase, and Cochrane Library databases up to January 2017. Non-published data were obtained from the sofosbuvir marketing authorization holder. Random-effects meta-analysis was performed to derive pooled estimates of relative risks (RRs) and corresponding 95% confidence intervals (CIs).

Results

Six trials, enrolling 2346 patients (1625 treated with sofosbuvir), were included. The overall risk of bias across studies was moderate. The risk of reported cardiac events (RR 0.87; 95% CI 0.41–1.85), arrhythmias (RR 0.93; 95% CI 0.34–2.51), bradycardia (RR 0.47; 95% CI 0.04–5.20), and tachycardia (RR 0.91; 95% CI 0.20–4.20) were not significantly different between sofosbuvir and non-sofosbuvir regimens. The risks of reported syncope, presyncope, loss of consciousness, or palpitations were similar among those receiving sofosbuvir regimens and controls.

Conclusions

The pooled data from RCTs did not show an increased risk of cardiac outcomes, including arrhythmias (and bradycardia), among sofosbuvir-treated patients, although the overall quality of the evidence supporting this conclusion was very low.

Registration: PROSPERO 2016:CRD42016033109 at http://www.crd.york.ac.uk/PROSPERO/.