

# Effectiveness of direct-acting antiviral therapy for hepatitis C in patients with hepatocellular carcinoma

## A systematic review and meta-analysis

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## Introduction

In contrast to interferon-containing treatment, direct-acting antiviral (DAA) therapy for hepatitis C virus infection (HCV) is highly curative and tolerable.

Among patients with hepatocellular carcinoma (HCC), optimal timing of DAA therapy remains unclear.

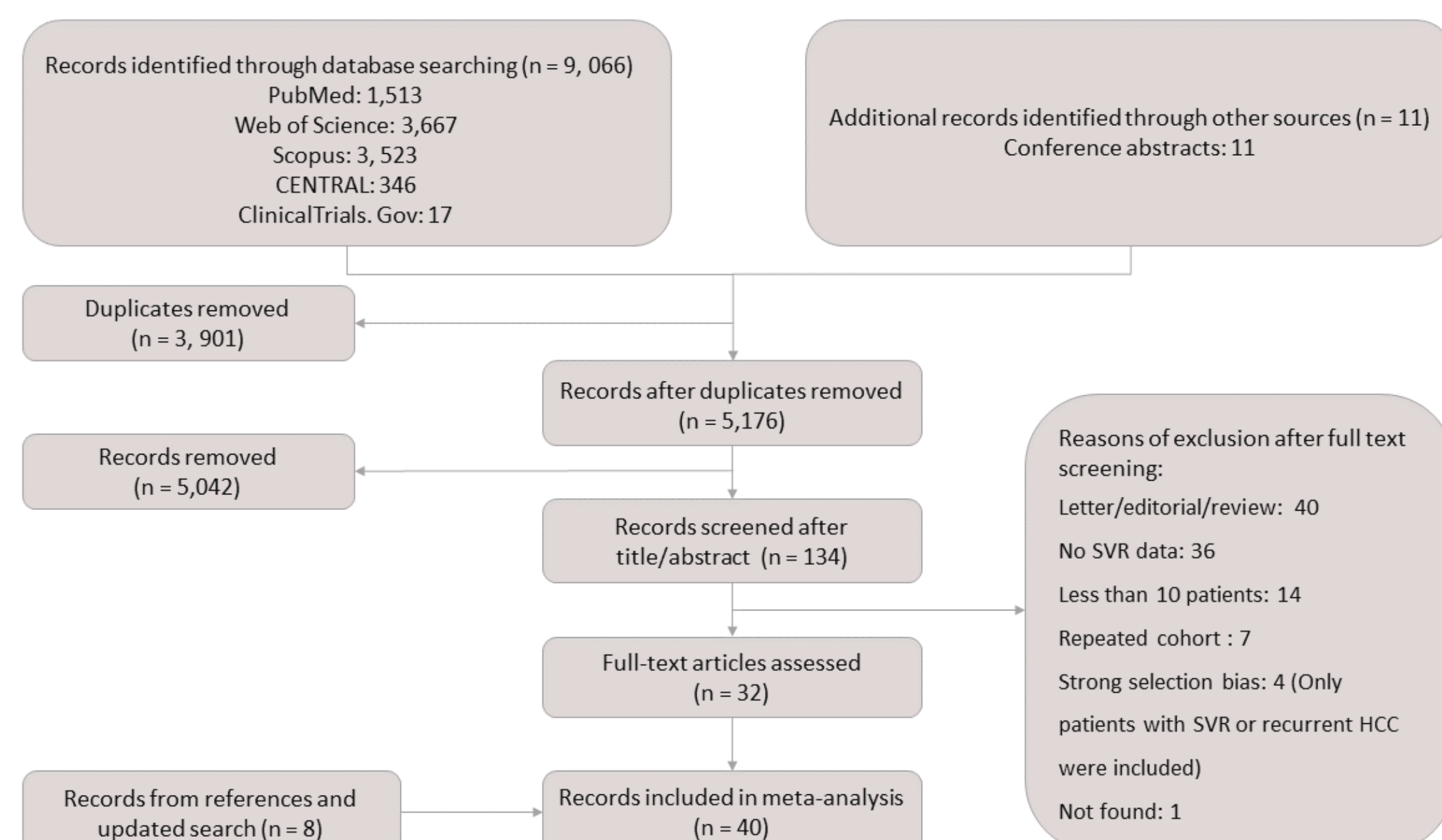
Data on the efficacy of DAA therapy in patients with HCC could inform this decision-making.

## Aim

This systematic review aimed to evaluate response to DAA therapy among patients diagnosed with HCV infection and HCC.

## Method

### Review process and study selection



### Data analysis

SVR was estimated, uses the principles of intent-to-treat analysis. 95% confidence intervals were calculated.

Pooled estimates of SVR and odds ratios of SVR in HCC vs. non-HCC group were conducted by meta-analysis.

Heterogeneity of SVR across studies was assessed using I-square statistics.

## Results

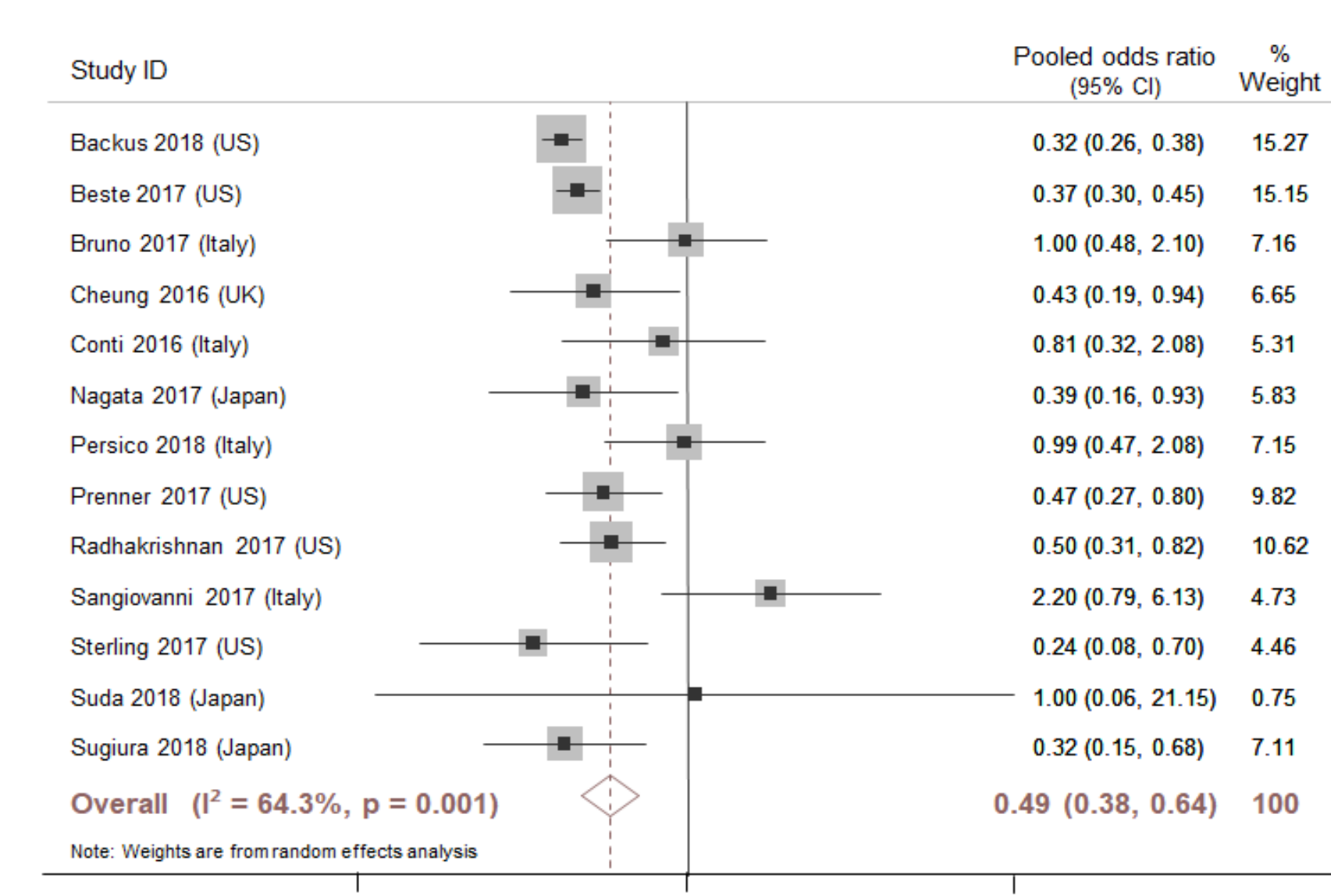
### Characteristics of included studies

	Number of studies (percentage)	Number of study participants
<b>Study design</b>		
Retrospective cohort studies	33 (82.5%)	3971
Prospective cohort studies	7 (17.5%)	709
<b>HCC management</b>		
Curative HCC management	32 (80%)	3631
Liver transplantation only	4 (10%)	470
<100% curative HCC management	8 (20%)	1049
<b>Distribution of genotype 3</b>		
Proportion of genotype 3 ≥10%	10 (25%)	1225
Proportion of genotype 3 <10%	10 (25%)	793
Proportion of genotype 3 unreported	20 (50%)	2662
<b>Distribution of suboptimal DAAs</b>		
≥10% of population	17 (42.5%)	2199
<10% of population	6 (15%)	483
Not reported	17 (42.5%)	1998
<b>Distribution of advanced cirrhosis</b>		
≥50% of population	2 (5%)	162
<50% of population	17 (42.5%)	2504
Not reported	21 (52.5%)	2014

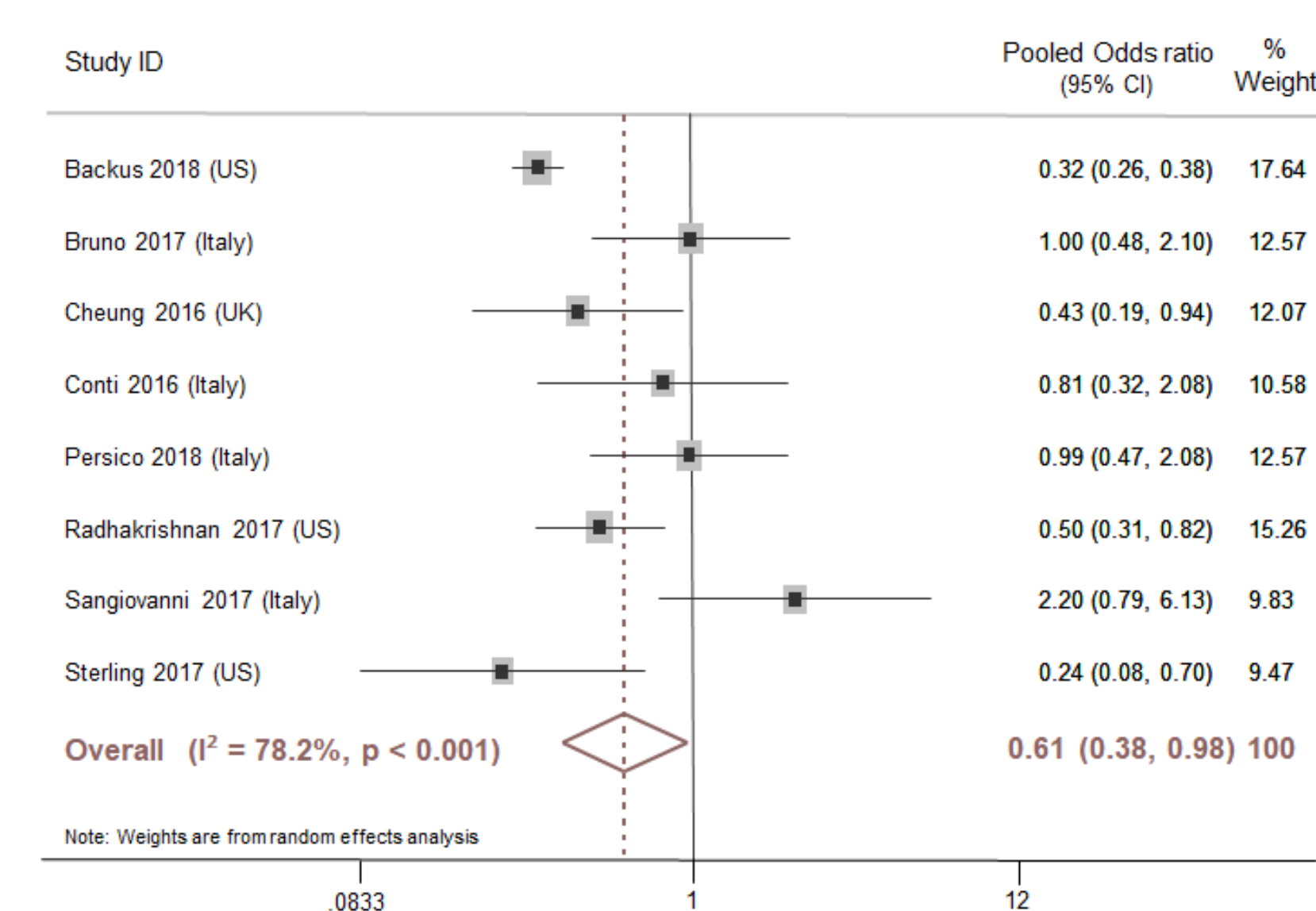
## Results

### Comparison of SVR in studies with both HCC and non-HCC patients

	Study no.	Patients no.		HCC group Pooled SVR (95% CI)	Non-HCC group Pooled SVR (95% CI)	Pooled odds ratio of SVR in HCC vs. non-HCC group	
		HCC	Non-HCC			Odds ratio (95% CI)	P value
All studies	13	2435	39504	86.9% (82.2-91.7)	92.6% (91.3-93.9)	0.49 (0.38-0.64)	0.001
Studies only including patients with cirrhosis	8	1500	20818	87.4% (81.4-93.3)	92.0% (90.5-93.6)	0.61 (0.38-0.98)	<0.001



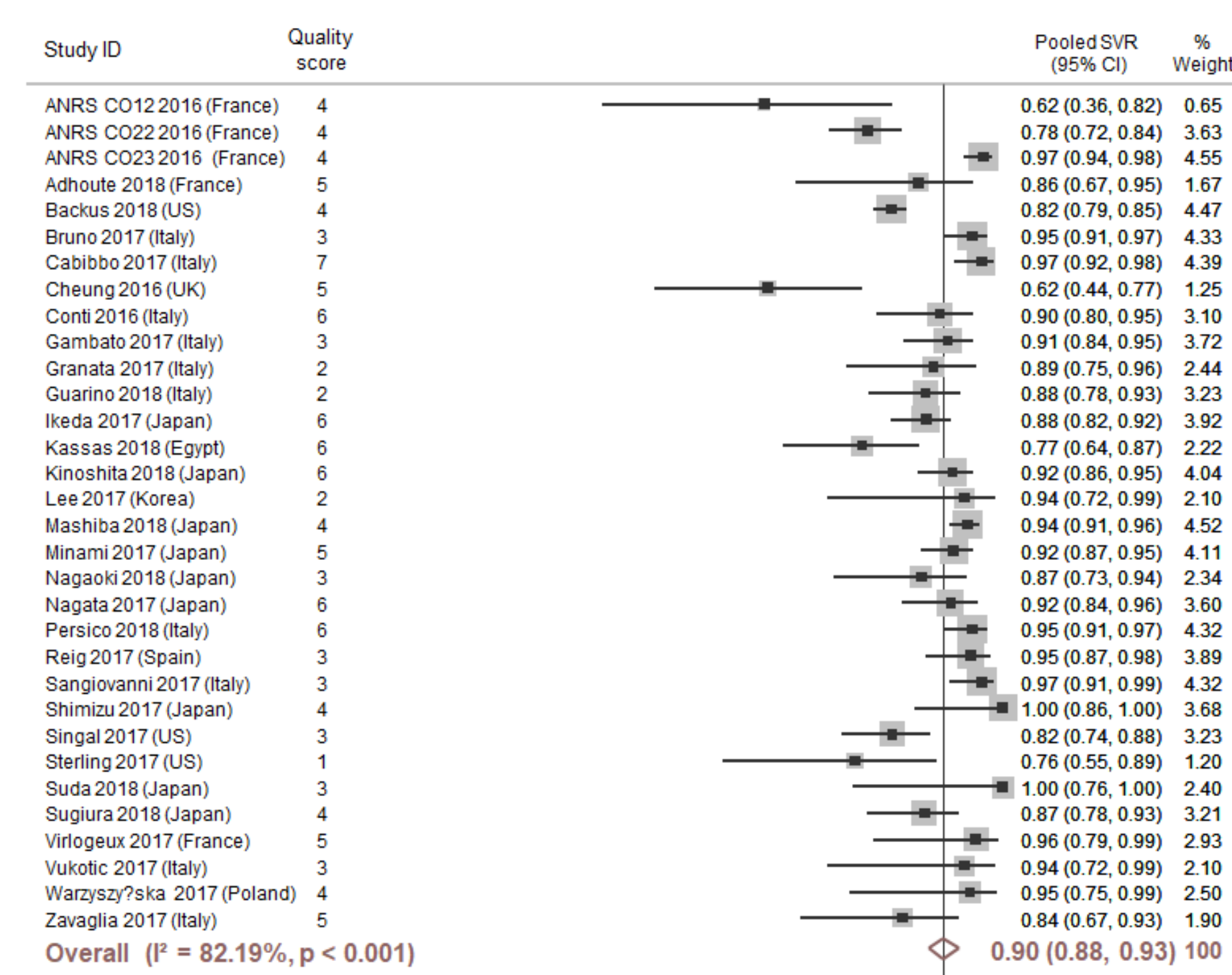
Comparison of SVR between HCC and non-HCC patients



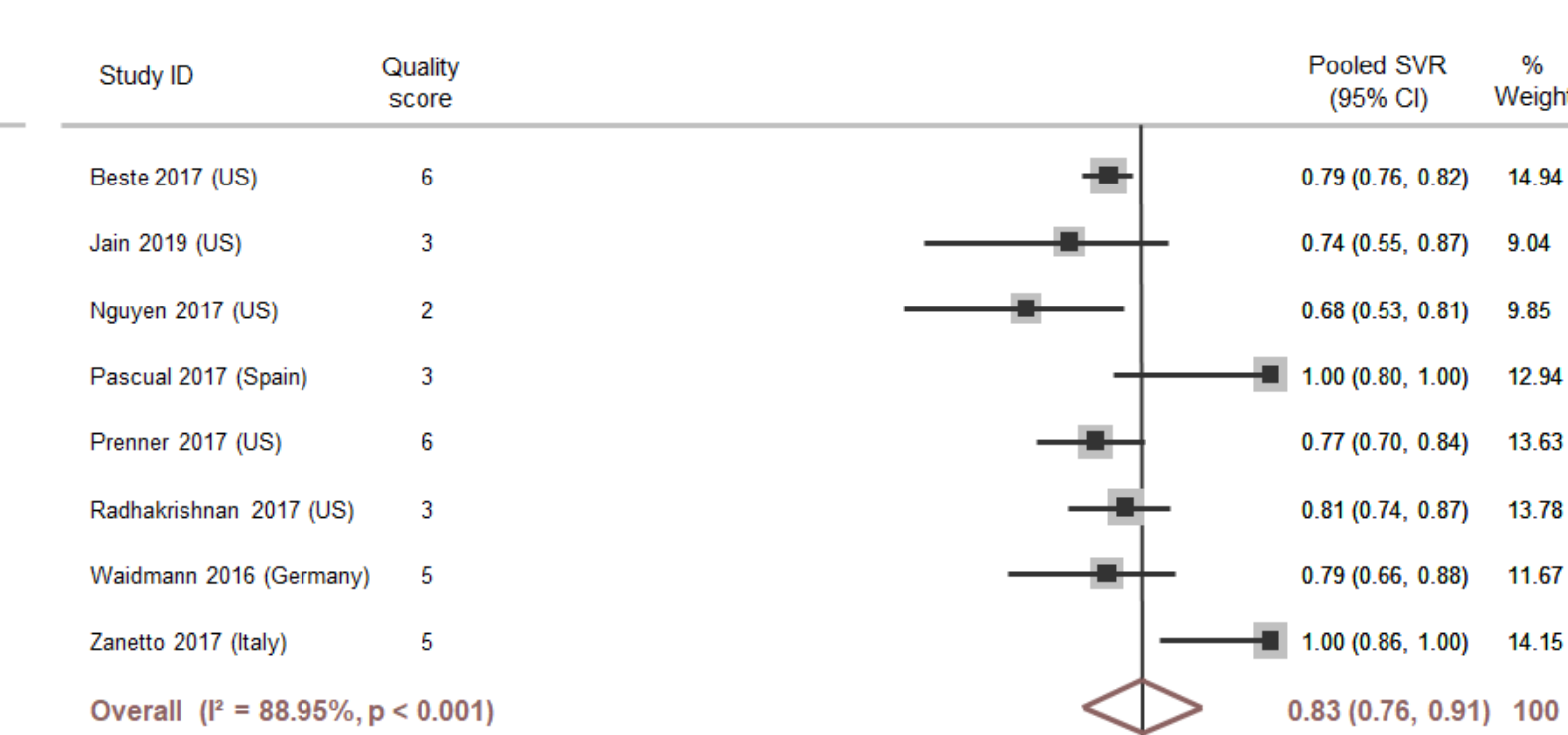
Comparison of SVR between HCC and non-HCC patients with cirrhosis

### Comparison of SVR in subpopulation categorized by HCC management

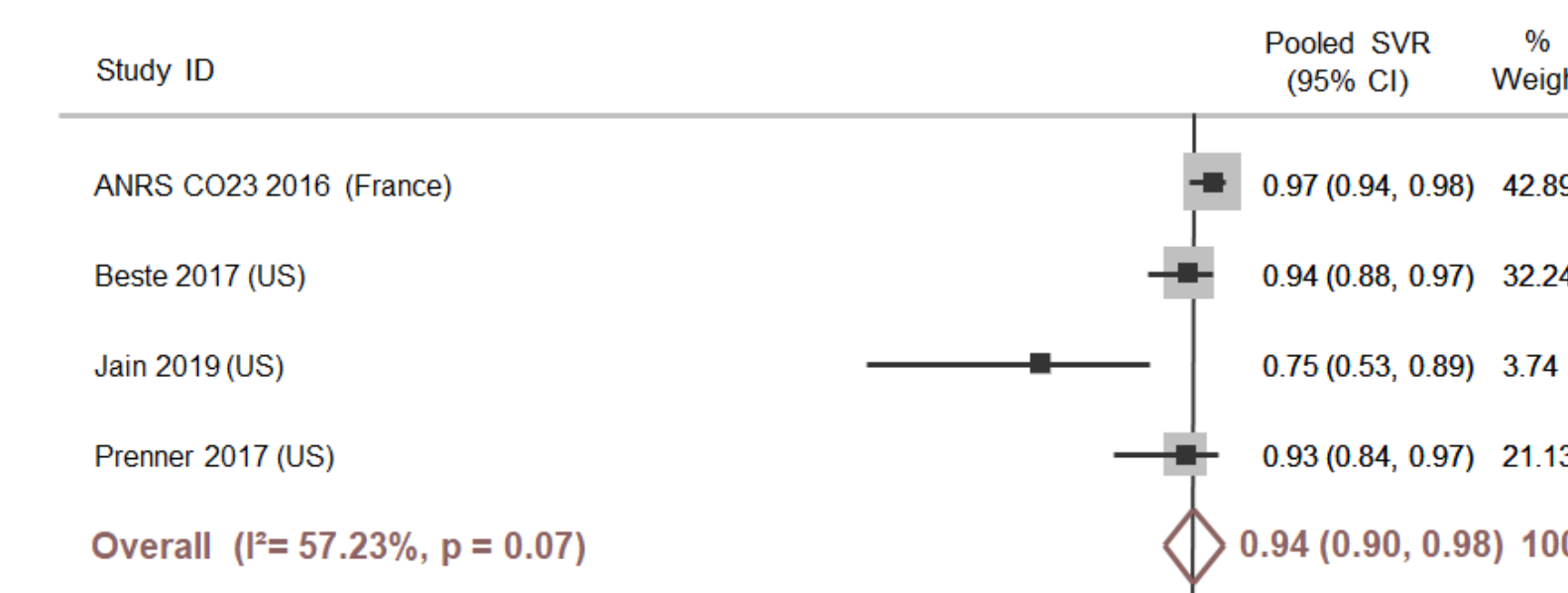
	Study no.	Population no.	Pooled estimate of SVR		
			Pooled SVR	95% CI	I <sup>2</sup>
Curative HCC management	32	3631	90.4%	88.1 - 92.7	82.2%
Liver transplantation	4	470	94.2%	90.4 - 98.1	57.2%
<100% curative HCC management	8	1049	83.3%	75.5 - 91.2	89.0%
All HCC patients	40	4680	89.0%	86.5 - 91.4	86.6%



SVR in patients with curative HCC management



SVR in patients with <100% curative HCC management



SVR in patients after liver transplantation

## Conclusion

- ✓ Response to DAA therapy was lower in patients with HCC compared to those without HCC.
- ✓ Among HCC patients, response to DAA therapy was higher in patients with curative HCC management.
- ✓ DAA therapy response was reasonably high, irrespective of HCC management, suggesting response-based considerations may not be relevant for the timing of DAA therapy.

### Acknowledgements:

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