HCV treatment outcomes in low and middle-income countries: a systematic review and meta-analysis

OBJECTIVE

The objective of this study is to undertake a systematic review and meta-analysis of studies reporting outcomes of patients treated for HCV in low- and middle-income countries.

METHODS

Search Strategy
1. hepatitis c
2. hcv
3. treatment
4. therapy
5. interferon
6. sustained virological response
7. svr
8. 1 OR 2
9. 3 OR 4 OR 5
10. 6 OR 7
11. 8 AND 9 AND 10
12. 11 AND [individual countries]

Databases
- MEDLINE via PubMed
- EMBASE

Inclusion criteria

Types of studies
- Cohort studies
- Case series >10 patients

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**Types of participants**
Inclusions:
- Adults and children, irrespective of HIV status
- Data will be disaggregated by HIV status at analysis

Exclusions:
- Patients with baseline co morbidities other than HIV
- Patients with established resistance to treatment

**Types of interventions**
- Any study involving interferon-based therapy
- Data will be disaggregated by type of interferon (pegylated vs unpegylated) and addition of other therapies (eg RBV)

**Types of outcomes**
*Primary*
- Sustained virological response (SVR)

*Secondary*
- Mortality
- End of treatment response (ETR)
- Adverse events
- Defaulting

**Determinants of treatment success**

The following baseline data will be extracted as important potential determinants of treatment success
- Baseline liver damage
- Genotype
- HIV status
- Treatment regimen
- Region of economic development (According to World Bank Classification)
- Geographical region (according to WHO Classification)
- IL28B gene polymorphism

**DATA ANALYSIS**

**Prevalence estimates**
Point estimates and 95% confidence intervals (95% CI) will be calculated for the proportion of patients achieving SVR for each study. The variance of the raw proportions will be stabilised using a Freeman-Tukey type arcsine square-root transformation and estimates pooled using a DerSimonian-Laird random effects model.
**Meta-analysis**

SVRs will be pooled using the DerSimonian-Laird random effects method. The $\tau^2$ statistic will be calculated to assess the proportion of overall variation attributable to between-study heterogeneity as this is less affected by the number of studies than the more commonly used $I^2$ statistic. Meta-regression and subgroup analyses will be conducted to assess the potential effect of patient and programme covariates. A p-value less than 0.05 will be considered to be significant.

**Statistical software**

Analyses will be conducted using Stata (version 11, www.stata.com).