Correspondence

High-Quality Meta-Analyses Are Required for Development of Evidence in Medicine

To the Editor—We read with great interest the recently published article by Hagan et al [1]. Hepatitis C virus (HCV) infection is the most common chronic bloodborne infection in the world [2]. Intravenous drug use is now the main risk factor of HCV infection, and the prevalence of hepatitis C infection among intravenous drug users remains very high [3].

Meta-analysis, the combination of results from different studies to produce a pooled estimation of an effect or an association, continues to attract controversy. Some scientists have rejected it because of many biases affecting the data. In contrast, others believe that meta-analysis may provide fresh evidence of advantages, effectiveness, and adverse effects of treatments [4]. Meta-analysis allows us to better evaluate prevalence rates and determine which interventions have the best evidence of effectiveness.

Several points should be considered when conducting and interpreting meta-analysis studies. First of all, quality assessment is a fundamental component of all systematic reviews and meta-analyses, but most published meta-analyses do not include quality assessments. Second, if such assessments are performed, the method should be mentioned [5]. If the authors of the present study have done any quality assessments, it would be interesting to know which method they used for critical analysis. The authors used a Q test to quantify heterogeneity, and the $I^2$ statistic was also used to determine the degree of inconsistency in the studies’ results. Because of the low number of studies included in this meta-analysis, especially in some subgroups, it would have been better to use the $\tau^2$ test for heterogeneity. The $\tau^2$ statistic is not dependent on the number of studies [6], so it is more useful when few studies are included.

The test of heterogeneity should not be the only determinant of choice of approach in meta-analysis. Patient selection and different baseline diseases should also be considered in determining the sources of heterogeneity [7].

It would be interesting to know why the authors used a random-effects approach when $I^2$ was 0 and $Q$ was $<1$, whereas $I^2$ $>50\%$ was considered to be significant heterogeneity. As a rule, $\geq 3$ studies are required for calculating a weighted average in meta-analysis [8], but the authors reported some results, such as those for behavioral interventions, with only 2 studies. Funnel plots can be drawn for detecting language bias as we check the existence of publication bias in a meta-analysis. It would have been good to investigate language bias in this study, because all included studies were in English. All studies included in this meta-analysis were also from high-income countries, pointing to a knowledge gap in developing countries. Including developing countries in such analyses could help makers of health policy in these countries in their efforts to prevent HCV infections.

Notes

Author contribution. Both authors participated in preparation of the manuscript.

Potential conflicts of interest. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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