Rating the quality of evidence in Cochrane network meta-analysis:
a cross-sectional study

Saiz LC, Leache L, Erviti J, Gutiérrez-Valencia M

Unit of Innovation and Organization, Navarre Health Service, Pamplona, Spain

Navarre Cochrane Associate Centre, Spain; Cochrane Hypertension Group; Cochrane Iberoamérica. Contact address: **lsaizfer@navarra.es**

Background

Indirect comparisons provide observational type evidence across randomized trials and may suffer the biases of observational studies. According to the traditional GRADE approach, evidence that includes observational data is initially rated as low quality. Therefore, network meta-analyses (NMA) would be expected to follow this rule by either starting at low quality or downgrading their high initial rates for this reason.

Objectives

1) To describe the certainty of the evidence for the main comparisons in the published Cochrane NMAs.
2) To analyze the reasons for downgrading the certainty according to GRADE domains, especially indirectness.
3) To compare the evidence ratings obtained from combined comparisons with that obtained from the direct comparisons of origin.
4) To evaluate the way the summary of findings table is presented in Cochrane NMAs.

Methods

A search in the Cochrane Library website using "Network Meta-Analysis" as a MeSH term was carried out on **April 15, 2019**. All published Cochrane NMAs were identified.

All the comparisons included in the summary of finding tables of the identified reviews were retrieved in order to analyze the application of the GRADE criteria for evaluating the certainty of the evidence.

- **2 reviewers** independently extracted the data
- No restriction by year of publication was implemented
- Systematic reviews were excluded when the NMA was intended but eventually not performed

Results

20 NMAs retrieved, published between 2016 and 2018

4 NMAs excluded since a NMA was not finally conducted
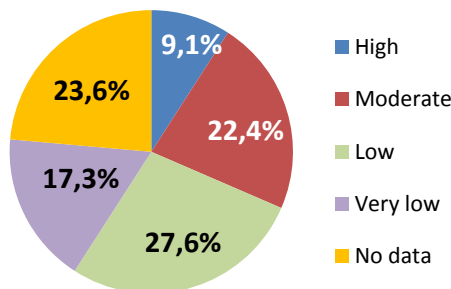
16 NMAs included with 254 outcome comparisons evaluated

Figure 1. Certainty of the evidence rated by Cochrane authors for main outcome comparisons (n=254 comparisons)
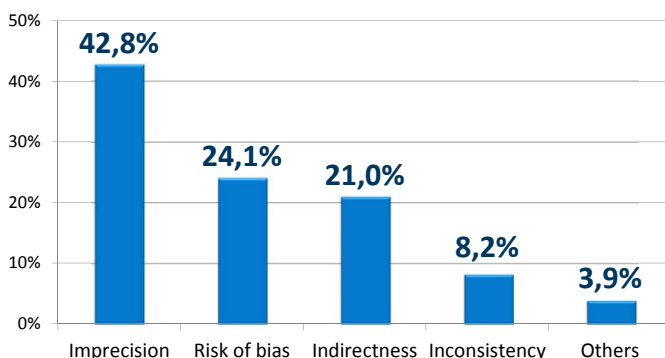
Legend: High 9,1%; Moderate 22,4%; Low 27,6%; Very low 17,3%; No data 23,6%

Figure 2. Reasons mentioned by Cochrane authors for downgrading the certainty of the evidence (n=257 reasons)

Imprecision 42,8%; Risk of bias 24,1%; Indirectness 21,0%; Inconsistency 8,2%; Others 3,9%

Table 1. Cochrane reviews with network meta-analyses included in the analysis

Author, year	Condition of interest
Gallos 2018	Postpartum haemorrage
Lombardi 2017	Liver disease
Majumdar 2017	Hepatocellular carcinoma
Mhaskar 2017	Multiple myeloma
Nevitt 2017	Epilepsy
Norman 2018	Venous leg ulcers
Oba 2018	Chronic obstructive pulmonary disease
Rodríguez 2017	Liver transplantation
Sbidian 2017	Psoriasis
Singh 2016, 2017 (2)	Rheumatoid arthritis
Suijkerbuijk 2017	Severe mental illness
Tenforde 2018	Meningitis
Virgili 2018	Diabetic macular oedema
Westby 2017	Pressure ulcers

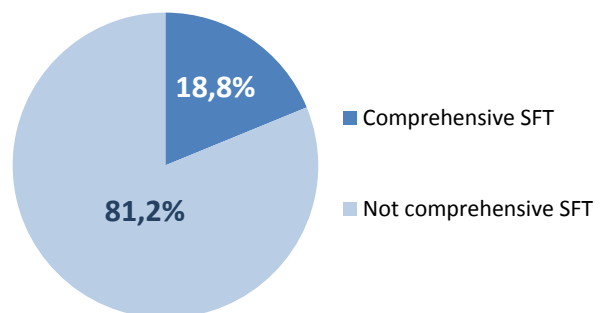Legend: Comprehensive SFT 18,8%; Not comprehensive SFT 81,2%

Figure 3. Cochrane network meta-analyses including direct, indirect and combined evidence in their summary of findings tables (SFT).

- Reasons for downgrading the certainty of the evidence were not provided in 1 review (6,3%).
- Only in 2 reviews (12,5%) certainty was reduced due to indirectness in all comparisons. It was never reduced two levels for this reason.
- When rating was available for direct and combined evidence, 4 out of 36 comparisons (11%) were rated lower quality for direct evidence.

Conclusions

Certainty of the NMAs evidence was NOT systematically rated as 'low' quality initially or downgraded due to indirect comparisons.
Indirectness or inconsistency were hardly ever considered as a downgrading reason. Assessment of quality evidence is rather heterogeneous among Cochrane NMAs . Very few NMAs reported results from both direct and indirect evidence separately.