NETWORK META-ANALYSES: AN OVERVIEW OF WORLDWIDE PUBLICATIONS CHARACTERISTICS

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INTRODUCTION

The global increase of publications of systematic reviews with network meta-analyses (NMAs) to compare treatments is evident. However, this recent tool poses some challenges on the conduction and report of results. (1-2)

AIMS

We aimed to systematically characterize the worldwide publications of NMAs of drug therapy comparisons.

METHODS

A systematic review of NMAs of drug interventions was performed. Searches in Medline (PubMed) and Scopus along with manual searches were conducted. The main characteristics of NMAs were systematically collected: year/country of publication, medical condition, evaluated drugs, analytical methods used.

RESULTS

After the systematic review process, 365 NMAs (2003-2016) were included (see flowchart in Figure 1). Different drugs for several clinical conditions were evaluated (Figure 2). The map of NMAs publications shows that United States (n=115), United Kingdom (n=86), China (n=73) published more studies (Figure 3). The main characteristics of NMAs report and conduction are available in Table 1.

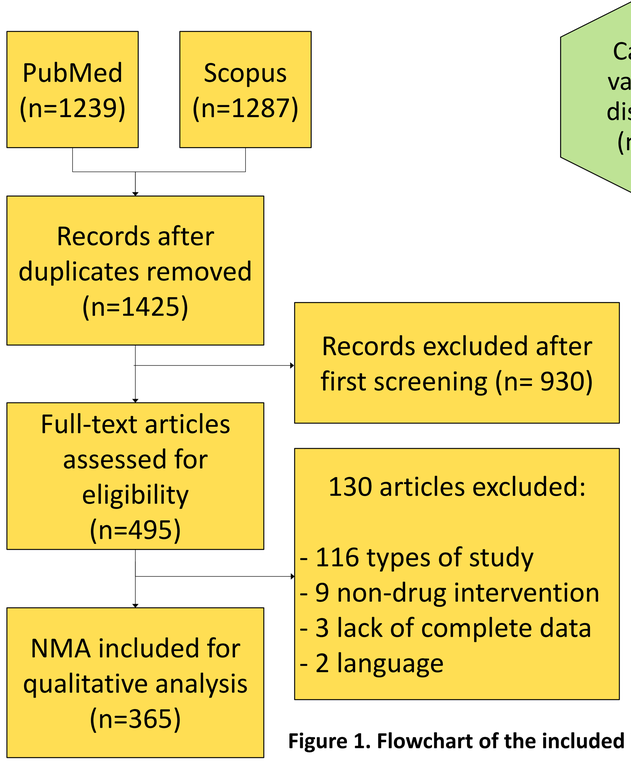

Figure 1. Flowchart of the included NMAs

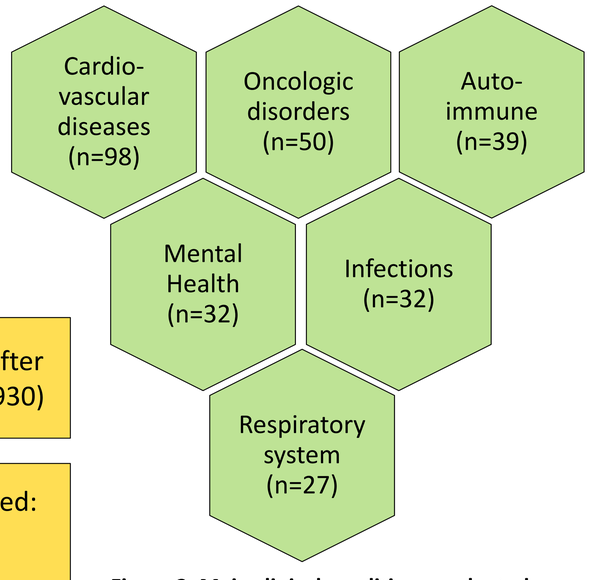

Figure 2. Main clinical conditions evaluated in the included NMAs

Figure 3. Map of NMAs. Number of publications by country (2003-2016)

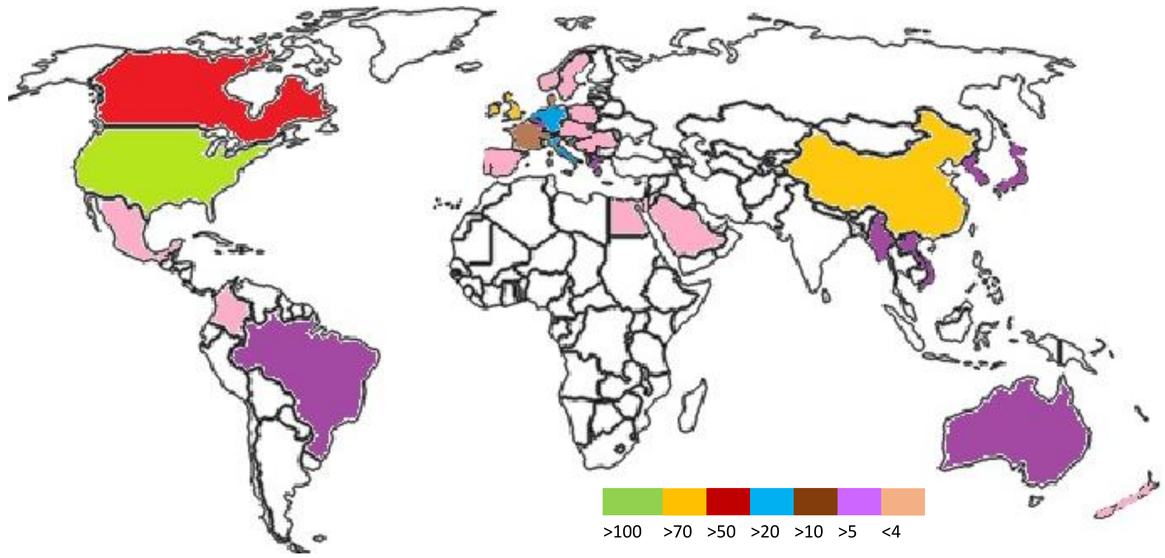

Table 1. Descriptive characteristics of articles reporting NMAs

PARAMETER	No. NMA reporting data	Total	PARAMETER	No. NMA reporting data	Total
Reported PROSPERO register: N (%)	365	53 (14.5%)	Used Bayesian statistical model: N (%)	315	297 (94.2%)
Follows PRISMA statement: N (%)	365	116 (31.8%)	Presents the network plot: N (%)	365	287 (78.6%)
Follows Cochrane recommendations: N (%)	365	32 (8.8%)	Describes the network geometry: N (%)	365	200 (54.8%)
Objective criteria to select drugs: N (%)	365	146 (40.0%)	Performs sensitivity analyses: N (%)	365	207 (56.7%)
Uses placebo as comparator: N (%)	365	240 (63.0%)	Performs inconsistency analyses: N (%)	365	169 (46.3%)
Provides complete search strategy: N (%)	365	108 (29.6%)	Performs model fit analyses: N (%)	365	119 (32.6%)
Performs manual search: N (%)	365	268 (73.4%)	Presents rank order analysis: N (%)	365	216 (59.2%)
Performs grey literature search: N (%)	365	176 (48.2%)	Provides supplemental material: N (%)	365	216 (59.2%)
Performs study quality assessment: N (%)	365	193 (52.9%)	Reports conflicts of interest: N (%)	365	326 (89.3%)
Included randomized controlled trials: N (%)	365	344 (94.2%)	Reports financial support: N (%)	365	317 (86.8%)

CONCLUSIONS

Some weaknesses of conduction and reporting NMAs, namely lack of registers or studies protocols, absence of search strategies, non-objective drug selection criteria and inaccessibility of data set may bias this technique credibility and reproducibility.

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