Literature Search in PubMed – Advanced Course

Exercise 2: Solution

Question:

2a: Does the additional intake of spironolactone reduce mortality in patients with heart failure?

2b: Do adults with exposure to mineral fibers have a higher mortality risk than adults without exposure to mineral fibers?

Task: Create a suitable search.

a) Identify the PICO aspects of the question and consider what you are looking for

b) Find suitable MeSH terms in the MeSH database

c) Find suitable text words (note synonyms and word variants)

d) Combine the MeSH terms and text words with OR and then the partial searches of the different PICO aspects with AND

e) *Bonus task: Filter your results with the RCT filter from Cochrane (https://work.cochrane.org/pubmed)*

Possible solutions

2a

a) Pico aspects

- P: heart failure
- I: Spironolactone
- C: -
- O: mortality

d) Pico Combination: 846 hits, 11.11.2021

(Heart failure[tiab] OR Cardiac Failure[tiab] OR Myocardial Failure[tiab] OR Heart Decompensation[tiab] OR "Heart Failure"[Mesh])

AND

(Spironolactone[tiab] OR Aldactone[tiab] OR "Spironolactone"[Mesh])

AND

(death*[tiab] OR dead*[tiab] OR die[tiab] OR died[tiab] OR dying[tiab] OR mortal*[tiab] OR fatal*[tiab] OR surviv*[tiab] OR "Mortality"[Mesh])

e) PICO and RCT filter (sensitivity- and precision-maximizing version), 394 hits, 11.11.2021

(Heart failure[tiab] OR Cardiac Failure[tiab] OR Myocardial Failure[tiab] OR Heart Decompensation[tiab] OR "Heart Failure"[Mesh])

AND

(Spironolactone[tiab] OR Aldactone[tiab] OR "Spironolactone"[Mesh])

AND

(death*[tiab] OR dead*[tiab] OR die[tiab] OR died[tiab] OR dying[tiab] OR mortal*[tiab] OR fatal*[tiab] OR surviv*[tiab] OR "Mortality"[Mesh])

AND

(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR placebo[tiab] OR clinical trials as topic[mesh:noexp] OR randomly[tiab] OR trial[ti] NOT (animals[mh] NOT humans [mh]))

2b

a) Pico aspects

- P: Adults[1]
- E: mineral fibers
- C: -
- O: Mortality

[1]Age groups as MeSH terms are tricky and we recommend not using them due to not (consistently) indexing. There are reasonably reliable filters for pediatric and geriatric studies (like filters for systematic reviews). But for *adult* you can not filter reliably. Also "NOT pediatric filter" is not allowed to be used because of the "NOT problem".

d) Pico Combination: 321 hits, 11.11.2021 (without population concept)

(mineral fiber*[tiab] OR vitreous fiber*[tiab] OR mineral wool*[tiab] OR glass fiber*[tiab] OR "Mineral Fibers"[Mesh])

AND

(death*[tiab] OR dead*[tiab] OR die[tiab] OR died[tiab] OR dying[tiab] OR mortal*[tiab] OR fatal*[tiab] OR surviv*[tiab] OR "Mortality"[Mesh])

e) PICO and RCT filter (sensitivity- and precision-maximizing version), 37 hits, 11.11.2021

(mineral fiber*[tiab] OR vitreous fiber*[tiab] OR mineral wool*[tiab] OR glass fiber*[tiab] OR "Mineral Fibers"[Mesh])

AND

(death*[tiab] OR dead*[tiab] OR die[tiab] OR died[tiab] OR dying[tiab] OR mortal*[tiab] OR fatal*[tiab] OR surviv*[tiab] OR "Mortality"[Mesh])

AND

(randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR placebo[tiab] OR clinical trials as topic[mesh:noexp] OR randomly[tiab] OR trial[ti] NOT (animals[mh] NOT humans [mh]))