



Automated quality assessment of medical evidence



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David Martinez Iraola, Yulia Otmakhova, Karin Verspoor



General clinical
question:

In adults without cardiovascular disease, does Mediterranean diet (compared to no dietary intervention) help reduce the risk of cardiovascular disease?

Specific outcome measured:

myocardial infarction

Q

Supporting statistics, metadata
and parts of review text:

Relative effect: HR 0.79 (0.57 to 1.10)

N of participants: 7447

Topics: 'Heart & circulation', [...]

Year: 2019

Implications for practice: “Despite the large number of trials included in the review there is still uncertainty regarding the effects of a Mediterranean-style diet on clinical endpoints and cardiovascular disease (CVD) risk factors [...]”

...

S

Overall quality score:

GRADE: ⊕⊕⊖⊖ (low)

Justification:

Downgraded for **imprecision**.

Confidence interval is wide enough to include both an important increase or decrease in the outcome.

Downgraded for **risk of bias**.

The only included study was the PREDIMED trial retracted due to methodological issues with randomisation [...]

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The difficulty of the task depends on the support provided.

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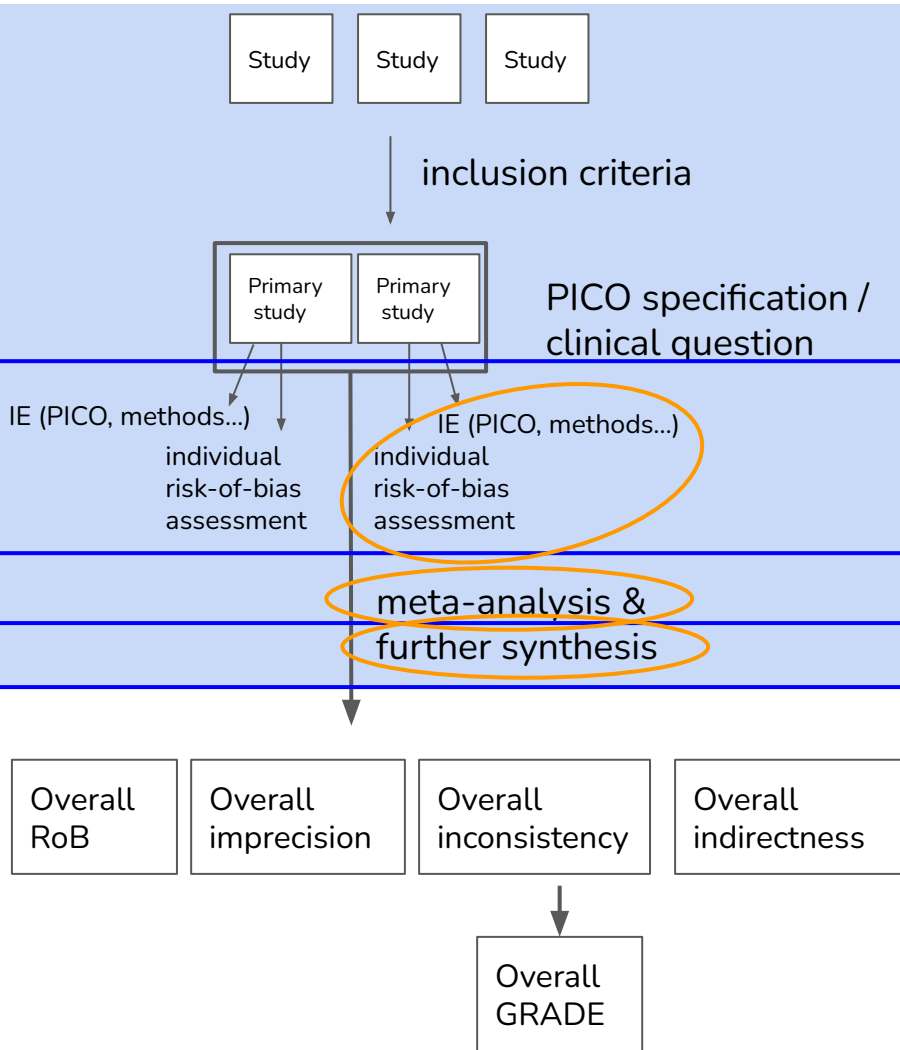
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Afilalo 1999

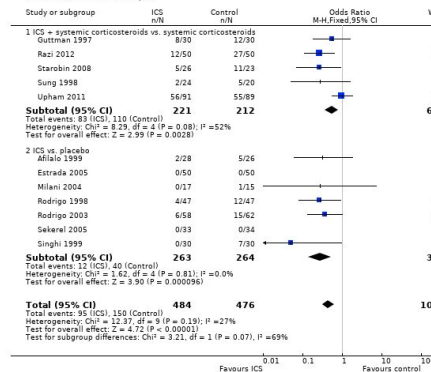
Methods	Design: randomised controlled trial Method of randomisation: computer-generated Means of allocation concealment: randomised Blinding: double-blind, placebo-controlled Withdrawal/drop-outs: 2 withdrawn from the placebo group, 2 withdrawn from the placebo group
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Comparison 1. ICS versus placebo

Outcome or subgroup title	No. of studies	No. of participants	Statistics
1 Admission to hospital	12	960	Odds Ratio
Hide forest plot ▲			

Analysis 1.1

Review: Early use of inhaled corticosteroids in the emergency department treatment of acute asthma
Comparison: 1 ICS versus placebo
Outcome: 1 Admission to hospital



Comparison 1. ICS versus placebo, Outcome 1 Admission to hospital.

publication bias

Risk of bias

Bias Authors' Support for judgement

Plain language summary

Available in English | Español | Français | Hrvatski

Early use of inhaled corticosteroids in acute asthma

Asthma is one of the most common chronic diseases in many backgrounds, suffer from asthma, with 1 in every 250 people (passages to the lungs) narrow from muscle spasm and swelling. Corticosteroids can be inhaled, or taken systemically.

Standard treatment for asthma attacks is to administer inhaled corticosteroids (to reduce the inflammation). The purpose of this review was to see if early use of inhaled corticosteroids in emergency department treatment settings was beneficial and selected for inclusion (13 paediatric, 7 adult studies).

This review found that inhaled corticosteroids used alone for asthma attacks, were well tolerated and had few side effects. Studies in the review included a variety of ICS medications (Pulmicort), dexamethasone sodium phosphate, fluticasone triamcinolone (Azmacort). The review also found that ICS reduced the number of hospital admissions from 32 to 17 per 100 patients. However, there are many unanswered questions about the best time to start treatment, the best dose, and the best duration of treatment. Research should focus on optimal dosage, dosage frequency, and defined outcomes (such as admissions criteria, pulmonary function tests, and quality of life).

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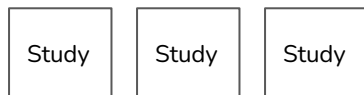
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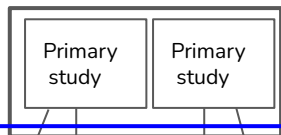
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Incomplete outcome data (attrition bias) All outcomes	Unclear risk	1 patient, who was randomised in analysis set comprised all randomised patients
Selective reporting (reporting bias)	Unclear risk	No apparent indication of reporting bias



inclusion criteria



PICO specification /
clinical question

IE (PICO, methods...)
individual
risk-of-bias
assessment

meta-analysis &
further synthesis

Overall
RoB

Overall
imprecision

Overall
inconsistency

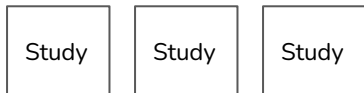
Overall
indirectness

Overall
publication
bias

Overall
GRADE

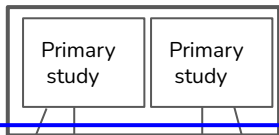
In practice:

1. What is the assumed level of support?
2. Can some levels be performed automatically?



inclusion criteria

RobotAnalyst,
SWIFTRReview



PICO specification /
clinical question

ExaCT,
RobotReviewer

IE (PICO, methods...)

individual
risk-of-bias
assessment

IE (PICO, methods...)

individual
risk-of-bias
assessment

MetaAnalyst

meta-analysis &
further synthesis

RevMan HAL

Overall
RoB

Overall
imprecision

Overall
inconsistency

Overall
indirectness

Overall
publication
bias

Overall
GRADE

