



Controlled-release oral melatonin supplementation for hypertension and nocturnal hypertension: a systematic review and meta-analysis

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Background:

Oral melatonin is a potential alternative treatment for hypertension and nocturnal hypertension.

Aim:

A meta-analysis to investigate:

P: people with hypertension

I: oral melatonin

C: placebo

O: primary outcome: out-of-office SBP/DBP

O: secondary outcomes:

- Sleep quality
- Safety

S: randomized-controlled trials

Method:

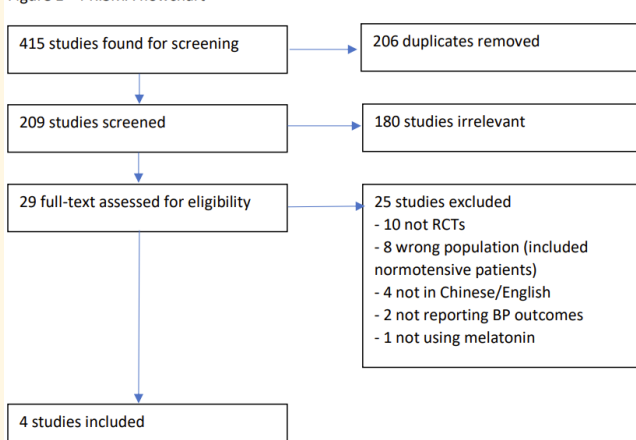
Meta-analysis

- MEDLINE, EMBASE, CINAHL Complete, and the Cochrane Library
- dual extraction
- random-effect model
- Cochrane risk-of-bias tool

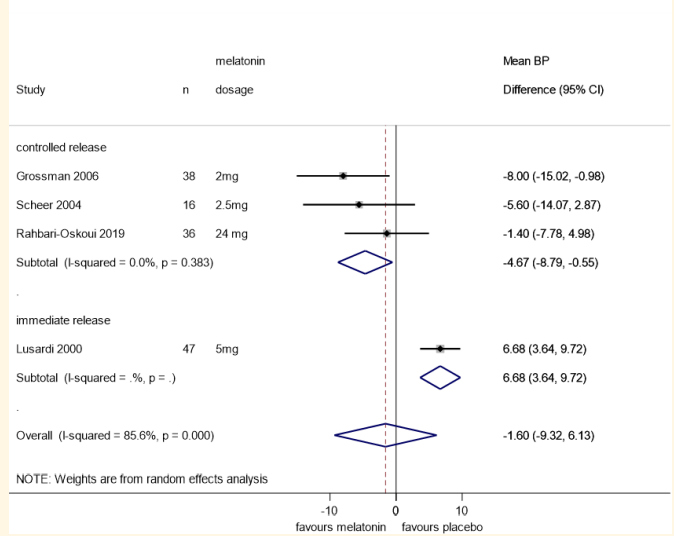
Results

- 4 studies including totally 137 participants
- Only 1 considered low risk-of-bias

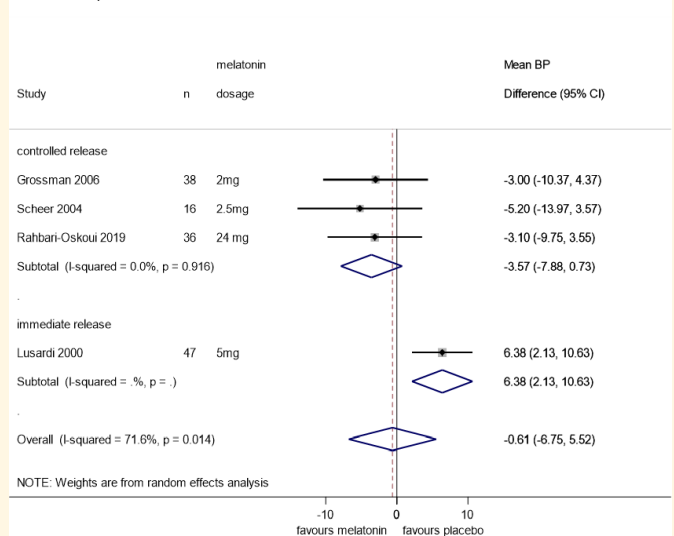
Figure 1 – PRISMA flowchart



Effect on asleep SBP



Effect on daytime SBP



Other results:

- Melatonin was safe but may ↑ daytime drowsiness.
- Melatonin may ↑ sleep efficacy by 2.72% (95% CI: -0.97–6.41, I²=0%) and total sleep time by 10.97 min (95% CI: -14.06–35.99; I²=1.4%) (not statistically significant)
- GRADE: low certainty of evidence

Conclusion:

- controlled-release (CR) melatonin ↓ asleep BP by 3.57 mmHg
- Consider CR melatonin for nocturnal HT, but large and high quality trials needed