The Use of Medications to Modify the Impact of Poor **Air Quality on Human Health: A Systematic Review**



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PM 10

PM 2.5

NO2

Background:

- The impact of air pollutants, especially particulate matter (PM) and nitrogen dioxide (NO2) has serious effects on human health.
- Currently, there are no licensed pharmacological treatments available to prevent or manage the effects of air pollution
- However, some medications that are approved for other health conditions have shown potential in mitigating or preventing the harmful effects of air pollution on the human body.

Aim:

To conduct a systematic review of the literature to explore the potential of pharmacological interventions in preventing, delaying, or treating the health effects of air pollution.

Methods:

Search strategy

Keywords sets

Inclusion Criteria

Quality Assessment





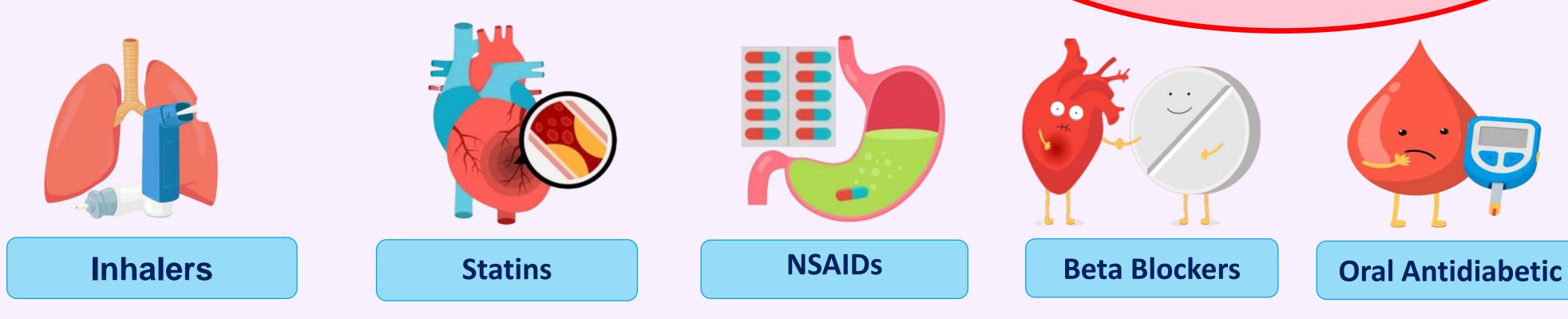
Newcastle Ottawa scale

Key point

□ Careful consideration of risks, side effects, and polypharmacy is essential when introducing new medications to address air pollution symptoms. □ To manage co-morbidities, the use of medication helped reduce susceptibility to PM exposure.

Results:

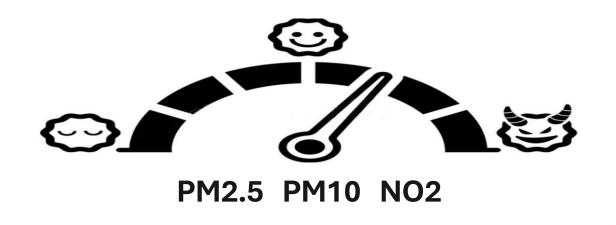
- > 13 of 689 screened articles were included
- > Five medication classes may prevent or treat particulate matter's harmful effects.



- > Medications showed anti-inflammatory, vascular, and bronchodilation effects but weren't used solely for air pollution treatment.
- > Statins, NSAIDs, and corticosteroids reduced inflammation and asthma symptoms, though NSAIDs pose risks, particularly for vulnerable populations.

Conclusion:

- > Some medications show promise in preventing or treating air pollution effects, but study results were inconsistent.
- > Optimising dosages and carefully assessing risks and side effects are key to ensuring they do not exacerbate existing health conditions.



Future work and implication on practice

□ Limited research exists on the pharmacological management of air pollution, mostly focusing on short-term exposure. □ Broader studies across populations are needed to validate findings and improve long-term treatment strategies.

References:



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