

Andrographis paniculata for symptomatic relief of respiratory tract infections (RTIs) in adults and children: a systematic review

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Background: Antimicrobial resistance is a major threat to global healthcare systems. Safe and effective alternatives to current antimicrobials are required. *Andrographis paniculata* (*A. paniculata*) is used in Western, Chinese and Ayurvedic herbal traditions for the treatment of respiratory conditions including cough, cold, sinusitis and influenza. This systematic review aimed to evaluate the clinical effectiveness and safety of *A. Paniculata* for symptoms of acute RTIs.

Methods: English and Chinese databases were searched from their inception to March 2016 for randomized controlled trials (RCTs) evaluating oral *A. paniculata*. Primary outcomes were improvement in RTI symptoms and adverse reactions. Random effects model was used to pool the mean differences and risk ratio with 95% CI reported. Methodological quality was evaluated using

the Cochrane risk of bias; two reviewers independently screened eligibility and extracted data.

Results: Thirty-three RCTs (7175 patients) were included. Interventions included *A. paniculata* as a monotherapy and as an herbal formulation. Most trials evaluated *A. paniculata* provided commercially but seldom reported GMP details. There was a statistically significant effect in favor of *A. paniculata* versus placebo (n=445, SMD: -0.69, 95% CI [-1.26, -0.12] for overall symptom; n=596, SMD: -0.39, 95% CI [-0.67, -0.10] for cough; and n=314, SMD: -1.13, 95% CI [-1.37, -0.89] for sore throat). Favorable effects were shown when *A. paniculata* was compared to standard care, and other herbal interventions. No major AEs were reported. The methodological quality of included trials was limited.

Conclusion: *A. paniculata* appears beneficial and safe for relieving RTI symptoms and shortening time to symptom resolution. Due to limited study quality and heterogeneity, the evidence reviewed is inconclusive. Well-designed trials evaluating the effectiveness and safety of *A. paniculata* are warranted.

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