ABSTRACT:

Helminth infections represent a significant global health concern, particularly in developing nations, contributing to malnutrition and other ailments. The rise of resistance to synthetic anthelmintic underscores the urgent need for alternative treatment strategies. This study investigated the phytochemical composition and anthelmintic efficacy of crude extracts from *Azadirachta indica* (AI) and *Andrographis paniculata* (AP), both individually and in combination, against helminths, with Albendazole serving as the standard reference. Phytochemical screening revealed the presence of phenols, flavonoids, alkaloids, tannins, saponins, glycosides, amino acids, and terpenoids in both plant extracts.

Anthelmintic activity, assessed by the time taken for paralysis and death of helminths, demonstrated a dose-dependent effect for all extracts (50, 75, and 100 mg/ml). Albendazole exhibited the most rapid action, inducing paralysis and death at 13±0.5 min and 22±0.4 min respectively, at 100 mg/ml. *A. indica* extract showed anthelmintic properties, with paralysis at 37±0.6 min and death at 50±0.3 min at 100 mg/ml. *A. paniculata* extract was more potent than AI, causing paralysis at 24±0.1 min and death at 27±0.1 min at the same concentration.

Notably, the combined extract of AI and AP displayed a synergistic or additive effect, significantly enhancing anthelmintic activity. At 100 mg/ml, the combination induced paralysis in 19±0.4 min and death in 21±0.8 min, comparable to Albendazole's efficacy (paralysis at 75 mg/ml: 17±0.9 min; death at 100 mg/ml: 22±0.4 min). These findings suggest that the polyherbal combination of *A. indica* and *A. paniculata* is a promising candidate for a viable alternative or complementary therapy for helminth infections, potentially mitigating drug resistance.