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A REVIEW ON KINFOLK MEDICINE EFFECTIVE FOR ANTIPROTOZOAL PARASITES

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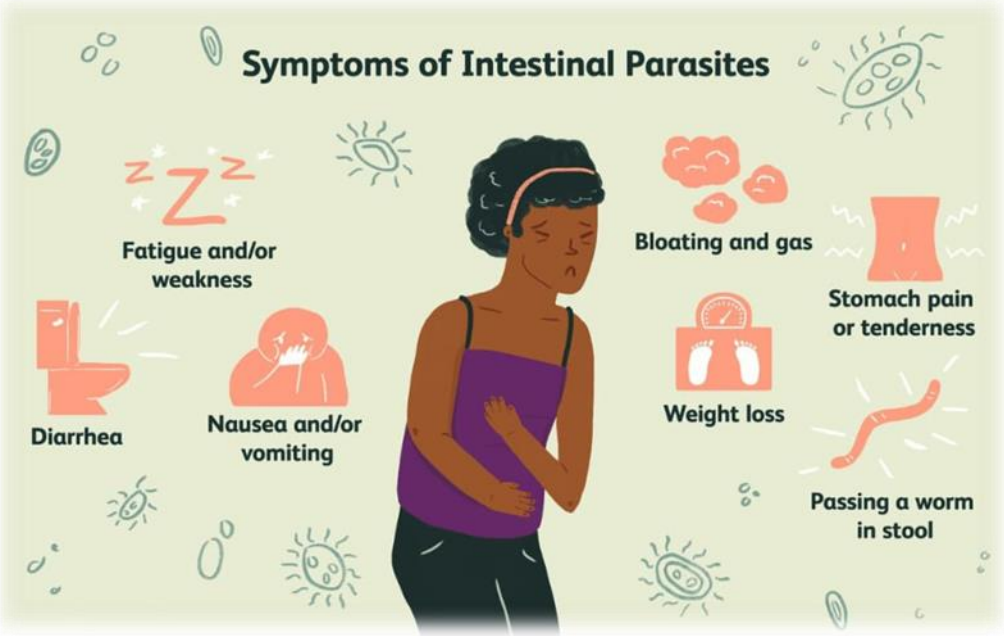
ABSTRACT
This review provides information about the synergistic effect of household products such as clove, fennel, cinnamon, and pineapple extract. The active compounds present in clove, fennel, cinnamon, and pineapple extract inhibit or kill the growth of microorganisms that are present in the intestine. Intestinal protozoal diseases are those diseases that affect the gastrointestinal tract. There are many parasites that affect the intestine. The active compound present in clove, fennel, cinnamon, and pineapple extract exhibits antiprotozoal effects.

KEYWORDS: Clove, fennel, cinnamon, pineapple extract, intestinal parasites, antiprotozoal effects.

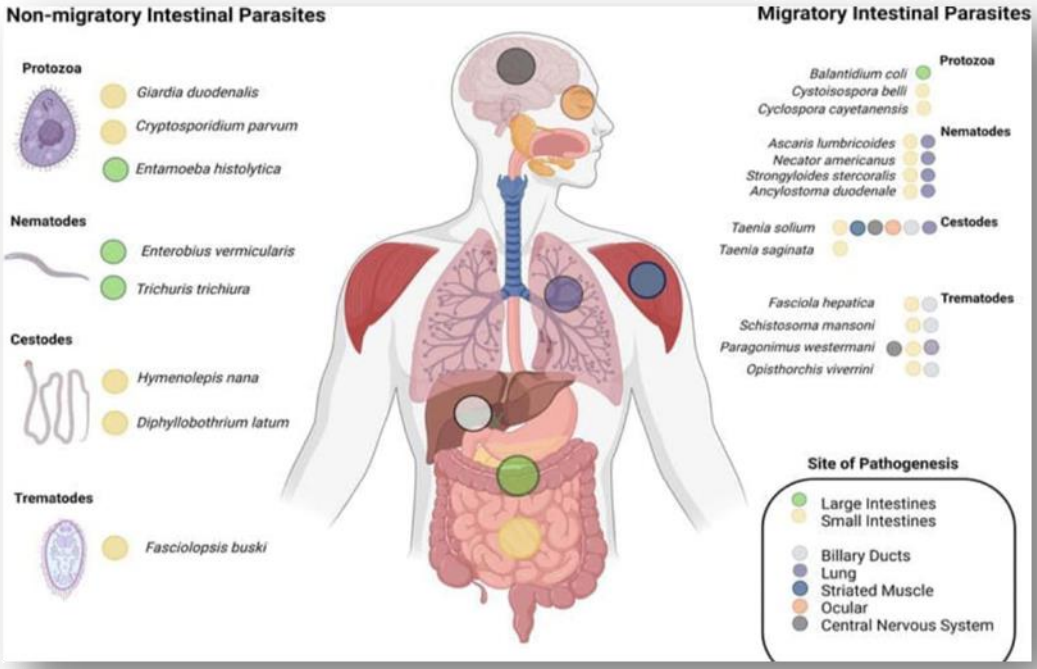
INTRODUCTION

Intestinal protozoal diseases are major health care concerns in upcoming countries. They are more sensitive to children, pregnant women, and immunocompromised people. They are caused by several helminths [e.g., Ascaris, hookworms, and tapeworms] and protozoa [e.g., Giardia intestinalis, Entamoeba histolytica, Cryptosporidium spp.].[2, 4]



TRANSMISSION

They may be transmitted by poor sanitary conditions, such as contamination of water, ingestion of contaminated foods, unwashed vegetables, or contact with the surface of contaminated soil.[3]



Health Effects
Major health effects are diarrhea, stomach ache, malnutrition, and inflammation.[3]

Affecting Ranges
The affecting ranges of intestinal parasites depend upon host body size, host movement pattern, transmission mode, population density, and the parasite's own specificity.

Short-term defectives
Short-term defects are acute kidney failure, anemia, etc.[6]

Long-term defectives
Long-term defects are inflammation and immune system dysfunction.[5]

Synthetic Drug
They are man-synthesized drug substances. They enhance the effect of natural drugs. They produce a wide range of activity with side effects. They produce no limited therapeutic effects. Some common side effects are respiratory disorders, hypertension, chest pain, muscle twitches, anxiety, nephrotoxicity, and neuropsychiatric effects. Synthetic drugs are benzimidazole derivatives such as nitrazoxanide and tyrosine kinase inhibitor drugs, which are most widely used to treat cryptosporidium and giardia spp., albendazole and mebendazole.[12]

CONVENTIONAL DRUGS
Clinical practice employs conventional drugs. They contain pharmaceutically active compounds, which produce fewer side effects. They are often prescribed for deworming; nature offers a treasure of antiparasitic remedies.[7]

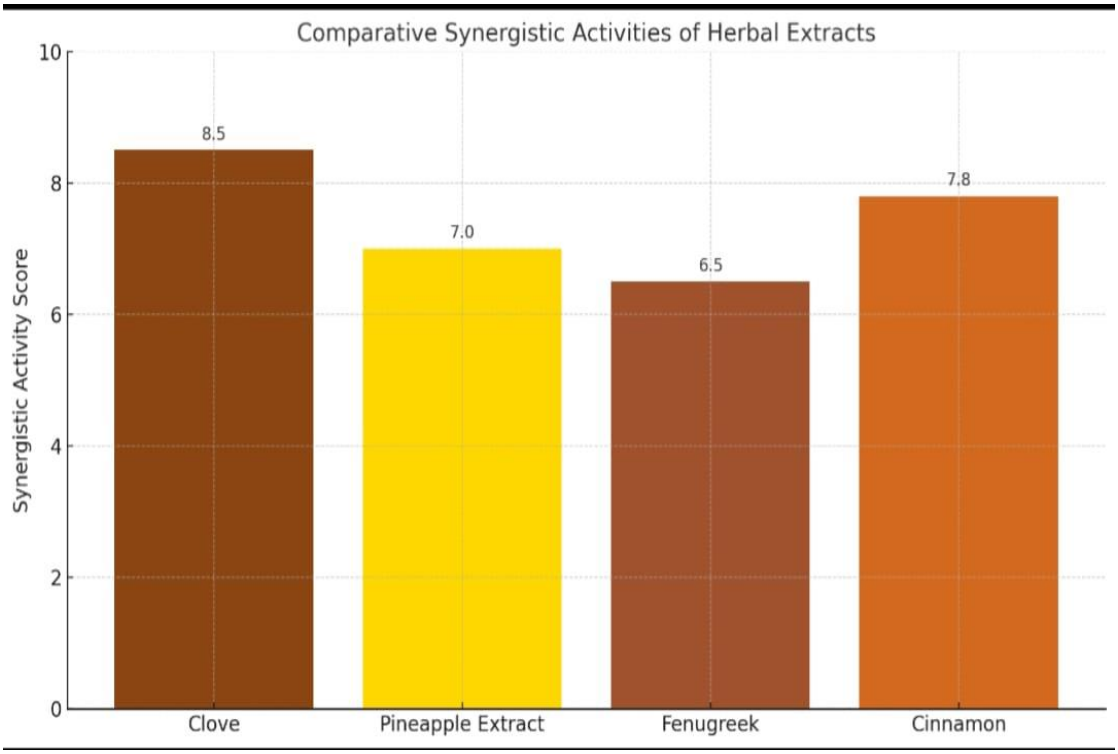
CLOVE
Synonyms: Syzygium aromaticum
Family: Myrtaceae
Geographical sources: Cultivated in tropical and subtropical countries.
Constitution: Volatile compounds, eugenol, beta-caryophyllene and alpha-humulene.
Composition: eugenol-50%; the remaining 10-40% is eugenyl acetate.[8, 7]
Mechanism of action: Eugenol disrupts cell membranes, inhibits metabolic pathways, and interferes with DNA and protein synthesis in microbes.

FENNEL
Synonyms: Foeniculum vulgare
Family: Umbelliferae
Constitution: Anethol, fenchone, estragole and 1,8-cineole [eucalyptol]. Anethole is excreted in breast milk.[7, 9]
Mechanism of action: Anethol modulates neurotransmitters, interfering with cancer cell proliferation and inhibits inflammatory pathways.

CINNAMON
Family: Lauraceae
Genus: Cinnamomum
Constituents: Cinnamaldehyde, essential oil oxygenated mono- and sesquiterpene compounds, and procyanidins.[13]
Cinnamon bark contains active compounds such as eugenol and cinnamaldehyde. They are used as whole/broken parts. They are also used in various perfume preparations.[7, 10]
Mechanism of action: Cinnamaldehyde modulates signaling pathways, regulating enzyme activities, and influencing gene expression.

PINEAPPLE EXTRACT
Family: Bromeliaceae
Genus: Ananas
Species: A. comosus
Constituents: alkaloids, amino acids, bromelain, cardiac glycosides, coumarin etc.[14]
The active constituents present in pineapple extract are rich in antioxidant activity. Bromelain has more commercial importance.[11]
Mechanism of action: Bromelain inhibits inflammation, breaks down proteins, and modulates the immune system.

SYNERGISM
1. Pineapple extract and clove exhibit antioxidant and antimicrobial properties. When combined, they may produce synergistic effects.
2. Pineapple extract and cinnamon possess antioxidant and antimicrobial activities. Their combination may lead to synergistic effects.
3. Pineapple and clove demonstrate anti-inflammatory and digestive benefits. When used together, they may exert synergistic effects.
4. Fennel and clove have antibacterial and anticancer properties. Their combination may result in synergistic effects.
5. Fennel and cinnamon exhibit antimicrobial, antifungal, and antioxidant properties. When combined, they may produce synergistic effects.
6. Clove and cinnamon possess antimicrobial, antifungal, and antioxidant activities. When used together, they may produce synergistic effects.



CONCLUSION

Conventional compounds like clove, fennel seeds, cinnamon and pineapple extract have a synergistic effect when given in combination with the above-mentioned compound.

The above-mentioned compounds may have antiparasitic effects.

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