# 4.4 A preliminary study of anti-bacterial effect of selected five Ayurvedic compound preparations.

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## ABSTRACT

Plant based medicaments have been man's prime therapeutic weapons to rescue him from disease. Plants are of relevance to pharmacology. Pharmacological properties of medicinal plants may be used as leads in developing modern therapeutic agents. . Thalisadee, Thripala, Hinguastaka, Dathree, and Manibadra are common Ayurvedic formulae used in traditional system of medicine in Sri Lanka. Thalisadee and Thripala Choorna are being commonly used in respiratory disorders such as cough, cold bronchitis and fever. The Hinguastaka, Dathree and Manibadra Choorna are being commonly used in gastrointestinal disorders such as diarrhoea dysentery vomiting and indigestion.. Most of these conditions may develop due to bacterial infections .The main objective of this study was to evaluate the antibacterial effect of these preparations. Minimum human single dose of these drugs (2.5 gram) was dissolved in sterile distilled water and kept in the shaker at 100 rpm continuously for 04 hours in order to get the maximum soluble liquid extract of these drugs. 0.7 gram of Nutrient broth was dissolved in 50 ml of distilled water and transferred in to five test tubes (10 ml. /tube) and sterilized by autoclaving at $121^0$C for 20 minuets. These Nutrient broth tubes were inoculated by using inoculating needle with already plated pure test cultures of *Pseudomonas aeruginosa, ,Escherichia coli* , *Salmonella typhi,* .These tubes were incubated at 37 $^0$ C for 18 to 20 hours. Sterilized Nutrient agar was transferred into ten sterilized Petri dishes at 40 $^0$ C and allowed to solidify on a horizontal plane. These plates were sealed and kept in incubator at $37^{.0}$C for 24 hours to exclude any contaminations and to reduce the moisture content. A known amount of (0.05 ml) each culture broth containing specific organisms was added to these solidified agar plates and spread evenly using a sterilized glass spreader. On these seeded agar plates sterilized metal cylinders were kept (03 Cylinders/plate) with gentle pressure. These cylinders were filled with 0.1 ml of above liquid extract of drug preparations. De ionized sterilized distilled water 0.1 ml and Chlorampenicol 0.025 mg/0.1 ml were used as controls. These plates were sealed and incubated at $37^0$C .This same procedure was repeated for three times for each of the test organism. Chlorampenicol showed 1.0 cm -1.5 cm clear inhibition zones of the bacterial lawns on every test organisms. None of the drug preparations showed any effect on *Escherichia coli* culture plates. The Ayurvedic compound preparations of Hinguastaka Choorna and Manibadra Choorna extracts showed averagely 0.5 cm and 0.3 cm clear inhibition zones of the bacterial lawns on *Salmonella typhi* plate respectively. Thripala Choorna showed averagely 1.0 cm clear inhibition zone of bacterial lawns on *Pseudomonas aeruginosa* plates. These zones were clear on every repetition. Theses results were statistically analyzed by using one sample student T-Test. All the means are in between accepted level and P value is $<0.05$. Comparison to the Chlorampenicol, Higuastka Choorna and Manibadra Choorna are active against *Salmonella typhi.* Thripala Choorna is active against *Pseudomonas aeruginosa*. Both, Dathree Choorna and Thalisadee Choorna are not active against any of tested microorganisms. This preliminary study scientifically justifies that the use of the powder preparations of Higuastka Choorna, Manibadra Choorna and Thripala Choorna for infective conditions such as diarrhea, dysentery, vomiting and indigestion.