SUMMARY

Among several respiratory diseases affecting man, bronchial asthma is the most common disabling syndrome. The therapy of asthma usually employs steroids or disease modifying drugs. The long-term use of these, however, may not limit the disease progression. All of these drugs have side effects and the search for a novel anti-asthmatic drug continues. There is a direct need to identify effective and safe remedies to treat bronchial asthma. If the Siddha medicines are prepared with one or many of the currently available anti asthmatic herbal drugs, the combination might prove to be the most potent for the treatment of asthma and the side effects can be reduced. For this purpose, Siddha formulations have been used successfully in Siddha medicine for centuries to cure asthma and other disease. The following facts justify our interest in this study.

In my present work we selected the four Indigenous herbs *Adhatoda vasica* (AV) (Leaf), *Solanum xanthocarpum* (SX) (Whole plant), *Tylophora asthamtica* (TA) (Leaf) and *Ocimum tenuiflorum* (OT) (Leaf) with the support literature background. The selected plants have folklore uses in any one of respiratory problems such as Cough, Wheezing, Expectorant or Bronchial inflammation. They are also used by Siddhars since time immemorial for various bronchial problems.

In addition, the four above said herbs were found to contain bioactive compounds, such as flavonoids, alkaloids, terpenoids and tannin. So, if they give in combined form in the form of poly herbal dose “Chooranam” it has more synergistic property and provide a more beneficial effect than single herbs on its extract or formulation. The objective of the research work was to prepare polyherbal preparation with multi directing mechanisms targeting on Asthma.

The powder microscopical study provides the basis for identification and authentication of the plant. The outcomes of physicochemical studies on siddha formulation may play a significant role in setting the standards for siddha formulation. Metal analysis from the siddha formulation is within the limit. So, the formulation was found to free from heavy metals. Preliminary phytochemical screening, TLC fingerprinting and HPLC studies revealed the presence of fairly large number of bioactive
compounds in chooranam to produce synergistic effect in asthma. In-vitro antioxidant study by nitric oxide scavenging method of siddha formulation was found to be more significant in free radical scavenging property when compared to individual herbal powder at the tested concentration with IC_{50} value of 92 µg/ml. So, Chooranam was found to be more effective. The same effect was also observed in DPPH radical scavenging activity. The acute toxicological studies showed that siddha formulation are safe at the dose level of 2000mg/kg b.wt. No sign of mortality was seen.

Histamine when inhaled has been shown to induce bronchoconstriction by direct H_{1}-receptor activation and also by a naturally mediated bronchoconstrictor effect via vagal reflexes. The results of present study of Siddha formulation suggested that significantly protected the guinea pigs against histamine-induced bronchospasm. Siddha formulation use traditionally in the management of asthma is justified. The guinea pigs exposed to histamine aerosol showed signs of progressive dyspnoea leading to convulsions. The Siddha formulation significantly prolonged the latent period of convulsions (PCT) as compared to control following the exposure of histamine aerosol. The action started after 1 h of drug administration. Thus, our findings suggest that Siddha formulation possess significant antihistaminic (H_{1} receptor antagonist) activity. Further studies are needed for exact molecular mechanism of action and also to isolate and characterize the active constituent for its activity. Therefore, this study was performed in order to provide further evidence on the effectiveness of Siddha formulation as well as to provide further demonstration on its acute and chronic antiinflammatory effects. The anti-inflammatory effect was obtained with all doses of Siddha formulation. From the beginning of the treatment, the doses used were capable to abolish the progressive increase of the paw’s dimensions, observed in the control group, either during the acute or the chronic study. Previous studies demonstrate that Siddha formulation appears to be efficient in sub-acute inflammatory processes, not presenting any or only minimum effects in acute processes.

The present study demonstrates the potent mast cell stabilizing activity, anti-histaminic activity, anti-cholinergic activity, and anti-inflammatory activity (acute: carrageenan; sub- acute: formaldehyde-induced edema, and chronic proliferative inflammation: cotton pellet granuloma) of formulation in different models of asthma and
inflammation, thereby indicating the possibility of developing a Siddha formulation as the cheaper, safer and potent anti-asthmatic and anti-inflammatory therapeutic agent.

The anti-asthmatic property could be attributed due to the presence of active constituents of the plants in their formulation. The possible mode of anti-asthmatic activity appears to be, prevention of bronchial hyper responsivness provoked by allergens (histamine), improved lung functions, anti-allergic and anti-anaphylactic activity through mast cell stabilizing property, inhibition of infiltration of and mediators during inflammatory phase, and marked modulation of humoral as well as cell mediated immune responses to antigen. Thus, Siddha formulation appears to have considerable potential to be used as an addon /alternative therapy in the treatment of mild to moderate bronchial asthma.