LITERATURE REVIEW

- Boroushaki et al., (2004), studied several therapeutic effects including diuretic, anti-pyretic and anti-scurvy has been reported for Portulaca oleracea. In previous studies the analgesic, anti-inflammatory, antihypertensive, anti-oxidant, muscle relaxant effects and neuropharmacological effects of the aqueous extract of Portulaca oleracea have been demonstrated on experimental animals. In the present study the antitussive effect of this plant was evaluated.

- Nadig, et al., (2005), studied of anti-tussive activity of Ocimum sanctum Linn in guinea pigs. Once material comes in contact with ciliated epithelium, it is transported by ciliary beating towards the trachea where there is the highest density of cough receptors.

- Pattanayak et al., (2009), studied that Coccinia grandis (Cucurbitaceae) has extensively used to get relief from asthma and cough by the indigenous people of India. The antitussive effect of aerosols of two different concentrations (2.5%, 5% w/v) of methanol extract of C. grandis fruits were tested by counting the numbers of coughs produced due to aerosols of citric acid, 10 min after exposing the male guinea pigs to aerosols of test solutions for 7 min. In another set of experiment methanol extract was investigated for its therapeutic efficacy on a cough model induced by sulfur dioxide gas in mice.

- Sunita P et al., (2009), proved ressa cretica Linn. Voigt. (Convolulaceae) has also been extensively used to get relief from asthma and cough by the indigenous people of India. In the present study the antitussive effect of the plant was evaluated in two different experimental models. The antitussive effect of aerosols of two different concentrations (2.5%w/v, 5%w/v)of methanolic extract of Cressa cretica Linn. (CME), codeine(0.03g/ml), and normal saline were tested by counting the numbers of coughs produced due to aerosols of citric acid 10 min after exposing the male guinea pigs to aerosols of different solutions (n=6).

- Na Han et al., (2010), evaluated to the potential expectorant and antitussive activity of a traditional Chinese medicine. The water extract and four fractions of the aerial part of Reineckia carnea were orally administrated to coughing mice induced by ammonium hydroxide and mice injected with phenol red, respectively, to investigate their medification effect on coughing and mucus scetration. 90% Ethanol fraction significantly lengthened the
latent period of cough and decreased cough frequency caused by ammonium hydroxide at the dose of 0.372 g/kg (p < 0.05).

- **Lee, et al., (2005)**, studied to determine the effects of a placebo treatment on cough in patients with cough associated with acute upper respiratory tract infection (URTI). Patients with dry or slightly productive cough associated with a history of URTI were recruited. Cough frequency (CF) over 15 minutes was recorded by means of a microphone connected to a pen recorder.

- **Pratibha et al., (2005)**, studied Ocimum sanctum Linn traditionally, the fresh fruit and leaf juice were commonly used in the treatment of cough as demulcent, mild upper respiratory tract infection, general stress syndrome, worm infestations, superficial fungal infections, and also as a diuretic. This plant has been evaluated pharmacologically for immunomodulatory, antistress, antimicrobial, anti-inflammatory antiasthmatic, hypoglycemic, hypotensive and analgesic activities and found to be effective in varying degrees in the animal models.

- **Hashemi et al., (2008)**, evaluated in order to collect ethnobotanical information about growth and health promoter plants as feed additive in broiler chickens, five medicinal plants Euphorbia hirta, Solanum torvum, Zingiber officinale, Curcuma longa and Zingiber zerumbet used by traditional medical practitioners for the treatment of several ailments of microbial and non-microbial origins were investigated for phytochemical screening and acute toxicity study. A total of 30 female broiler chicks were obtained. At 21 days of age, the chicks were allocated at random into six groups.

- **Naz et al., (2006)**, evaluated the chemical investigation of the ethanolic extract of the root bark of Onosma hispidum following antitussive activity directed isolation led to the isolation of 4-hydroxy-3-methoxy cinnamic acid (mCA) and 4-hydroxy-3-methoxy benzoic acid (mBA) which have been reported for the first time in this species. Antitussive activity of the compounds was evaluated by reduction in frequency of cough induced by SO2 gas in mice.

- **Ahmad et al., (2008)**, evaluated Plants have been one of the major sources of medicines since the dawn of human civilization. The contribution of plant-derived drugs in modern times is still significant and much interest has been focused on exploiting the wide diversity of medicinal plants in both traditional systems of medicine and modern drug development.
In this review, we assess three plants, namely Punica granatum L., Curcuma longa L. and Zingiber officinale Rosc., for their biological activities.

- **Rouhi et al., (2006)**, evaluated High prevalence of asthma require more attention and effective therapies since the current therapeutic approaches have high side effects nowadays new therapies like homeopathy and herbal drugs are more delighted. The study was performed on 92 patients with pure Asthma. The patients were similar concerning the age, wheezing, weekly use of spray and the drug weed. At the beginning, spirometry was done for all the patients. Then of the 1-month the patients were divided into two groups. The first group was given ginger (150 mg) every 8 hours whereas the second group received placebo.

- **Gupta et al., (2009)**, proved cough is the most common symptom of respiratory diseases. When cough becomes serious, opioids are effective, but they have side effects like sedation, constipation, some addiction liability and also compromise the respiratory function. Therefore, there is need to have effective anti-tussive agent which do not have respiratory suppressant activity. The present study was carried out to evaluate anti-tussive activity of combination of herbal drugs as formulations in sulphur dioxide (SO2)-induced cough model in mice. Albino mice of either sex, weighing 25-30 g were divided into eight groups, (n = 6).

- **Reynolds et al., (2004)**, evaluated pharmacology of cough is an indispensable defensive reflex. Although generally beneficial, cough is also a common symptom of diseases such as asthma, chronic obstructive pulmonary disease (COPD) and lung cancer. Cough remains a major unmet medical need and, although the centrally acting opioids have remained the antitussive drug of choice for decades, such opioids possess many unwanted side-effects. However, new research into the behaviour of airway sensory nerves has provided greater insight into the mechanisms of cough and new avenues for the discovery of novel non-opioid antitussive drugs.

- **Kamei (1996)**, studied the role of opioidergic and serotonergic mechanisms in cough and antitussives This paper provides an overview of our current understanding of the serotonergic and opioidergic mechanisms of cough and antitussives. Systemic administration of 8-OH-DPAT, at doses of 0.1 and 0.3 mg/kg, ip, markedly reduced the number of coughs in rats in a dose-dependent manner. The antitussive effects of 8-OH-DPAT, dihydrocodeine and dextromethorphan were significantly reduced by pretreatment with methysergide, but not with ketanserin.
Takahama et al., (2007), studied Central and peripheral mechanisms of narcotic antitussives: codeine-sensitive and -resistant coughs. Narcotic antitussives such as codeine reveal the antitussive effect primarily via the μ-opioid receptor in the central nervous system (CNS). The κ-opioid receptor also seems to contribute partly to the production of the antitussive effect of the drugs. There is controversy as to whether δ-receptors are involved in promoting an antitussive effect. Peripheral opioid receptors seem to have certain limited roles.

Caroline et al., (2011), evaluated immunomodulatory activity of aqueous extract of Ocimum sanctum in rat. Biochemical, haematological and Immunomodulatory effect of Ocimum sanctum in rat was studied. To evaluate the immunomodulatory effect of Ocimum sanctum in rat, aqueous extract of Ocimum sanctum were administered orally at doses of 100, 200 mg/kg/day for 45 days in wistar albino rats.

Kemper et al., (1999), evaluated Ginger (Zingiber officinale) Principal Use: Nausea due to motion sickness, morning sickness, general anesthesia or chemotherapy. Other Proposed Uses: Headaches and arthritis, chills associated with viral infections, high cholesterol. Ginger is primarily used to treat nausea, but it is also used as an anti-inflammatory, a pain remedy, a warming remedy and a cholesterol-lowering herb. Randomized controlled trials support its use in preventing nausea. Case studies suggest usefulness in treating migraines and inflammatory arthritis, but no randomized trials have been reported. Animal studies suggest thermogenic effects, but this has not been evaluated in humans. Data are insufficient to recommend ginger as a cholesterol-lowering supplement.

Ignacimuthu et al., (2010), evaluated Antimycobacterial activity of two natural alkaloids, vasicine acetate and 2-acetyl benzylamine, isolated from Indian shrub Adhatoda vasica Ness. leaves. In folk medicine, Adhatoda vasica Ness. (Acanthaceae) is used to treat asthma and cough. The leaves of A. vasica were powdered and extracted with hexane, ethyl acetate and methanol. The hexane extract showed 97% reduction in colony-forming units (CFU) at 100 μg/ml. The hexane extract was subjected to column chromatography. Two natural compounds, vasicine acetate and 2-acetyl benzylamine, were isolated from it. They were bioassayed against Mycobacterium tuberculosis.
Shetty et al., (2006), proved Chewing tulsi leaves relieves cold and flu. During the rainy season, when malaria and dengue fever are widely prevalent, tender leaves, boiled with tea, act as preventive against these diseases. In case of acute fevers, a decoction of the leaves boiled with powdered cardamom in half a litre of water and mixed with sugar and milk brings down the temperature. Water boiled with basil leaves can be taken as drink in case of sore throat. This water can also be used as a gargle. Evaluated A decoction of the leaves, with honey and ginger is an effective remedy for bronchitis, asthma, influenza, cough and cold.

Maity et al., (2000), studied the effect Ocimum sanctum, on mouse swimming performance in a methanol extract, obtained from the roots of were studied using three different doses. On the basis of he has found, a high dose (400mg/kg, i.p.) of the extracts of Ocimum sanctum increased the swimming time suggesting a central nervous system stimulant and/or antistress activity. The effect produced by the extract was comparable to that of desipramine, an antidepressant drug.

Khanna et al., (2003), proved the alcoholic leaf extract of Ocimum sanctum was tested for analgesic activity in mice. In the glacial acetic acid (GAA)-induced writhing test, OS (50, 100 mg/kg, i.p.; and 50, 100, 200 mg/kg, p.o.) reduced the number of writhes. OS (50, 100 mg/kg, i.p.) also increased the tail withdrawal latency in mice. Naloxone (1 mg/kg, i.p.), an opioid antagonist, and DSP-4 (50 mg/kg, i.p.), a central noradrenaline depletor, attenuated the analgesic effect of OS in both the experimental models, whereas, PCPA (300 mg/kg, i.p.), a serotonin synthesis inhibitor, potentiated the action of OS on tail flick response in mice.

Maimes (2004), proved cardiotonic- prevents heart attack. Normalizes blood pressure. Mild property of blood thinning that prevents the heart strokes by decresing dangerous cholesterol. Reduces the effect of irritating drugs on stomach lining and increases the protection of protective stomach. Antimicrobial effect inhibits growth of E.coli. Enhances the digestion and absorption. Lowers the stress induced release of adrenal hormones. Antiaging effect. Reduces the asthmatic and other allergic reactions. Antiviral effect is seen specially in viral hepatitis and AIDS virus.
Biswas et al., (2005), studied Improves the metabolic breakdown and elimination of dangerous chemicals in the blood hence also acts as liver protective. Used in Eczema and Psoriasis and other skin diseases. Treatment of malaria. Used in treating bronchial asthma. As it has bronchodilatory action and expectorant action.

Laxmi et al., (2005), study ocimum sanctum Linn (Labiatae) popularly known as the holy basil or Tulsi in India is a home remedy for various illnesses. Traditionally, the fresh fruit and leaf juice were commonly used in the treatment of cough as demulcent, mild upper respiratory tract infection, general stress syndrome, worm infestations, superficial fungal infections, and also as a diuretic. This plant has been evaluated pharmacologically for immunomodulatory, antistress, antimicrobial, anti-inflammatory antiasthmatic, hypoglycemic, hypotensive and analgesic activities and found to be effective in varying degrees in the animal models.

Bhartiya et al., (2006), proved a decoction of madhuka or its powder was prescribed with honey in anaemia. Yashti mixed with cow’s milk was prescribed for promoting lactation. 10g madhuka powder mixed with 10g sugar, pounded with rice water was prescribed in men. metrorrhagia. A confection of rice.milk, prepared with yashtimadhu, was prescribed in hoarseness of voice. Charaka also prescribed a paste of liquorice and picrorrhiza kurroa with sugar water as a cardiac tonic. Charaka datta prescribed yashtimadhu and santalum album, powdered with milk, in haematemesis. Sushruta prescribed the paste of yashtimadhu 10g, in intrinsic haemorrhage.

Mroczek et al., (2004), studied Plant samples from leaves of Cerinthe minor, Cynoglossum clandestinum, Echium tuberculatum (as well roots), Eritrichium rupestre, Lithospermum purpureo-coerulem, Nonnea lutea, Nonnea setosa, Onosma stellulatum and Cynoglossum amabile were screened for toxic pyrrolizidine alkaloids (PAs) with a newly elaborated procedure comprising gradient HPLC with diode array (DAD) and thermabeam electron impact mass spectrometry (EI-MS).

Kokate et al., (2007), evaluated Antispasmodic an agent which relieves or eases muscular cramps. Demulcent -a substance that soothes inflamed mucous membranes and protects them from irritation. Diuretic-an agent that increases the volume and flow of urine which
cleanses the urinary system. Expectorant - an agent that promotes the discharge of mucous and secretions from the respiratory passages.

- **Gupta et al., (1997),** proved the shodhini experience has been able to draw upon a range of disciplines in an attempt to develop a woman-centered health care alternative. In the process, it has drawn upon a critique of patriarchy, our understanding of feminism and gender, ecology and class, knowledge of plants through botany and phytochemistry and knowledge of gynaecology, naturopathy and Ayurveda. These and other disciplinary strands, especially local women's knowledge systems, have helped us arrive at an understanding of class- and gendersensitive indigenous health care.

- **Jadeja et al., (2006),** studied its soothing effects on the mucous membranes mean that it also helps relieve the pain and inflammation of sore throats, tonsillitis and other throat infections. At the same time, documented antiviral activity may support the immune system's efforts to fight off other infections. In children cough liquorice is used with Echinacea combined with thyme to relieve cough. It acts by breaking up bronchial mucus.

- **Connell et al., (1995),** evaluated Idiopathic persistent nonproductive cough (PNPC) is characterized by enhanced cough sensitivity to inhaled capsaicin, suggesting that capsaicin-sensitive afferent airway nerves are either present in increased numbers or functionally upregulated. In 16 patients with idiopathic PNPC and eight healthy control subjects, we measured cough sensitivity to inhaled capsaicin and the anatomic density in bronchial epithelium of nerves immunoreactive for the general nerve-marker protein gene product (PGP)-9.5 and the sensory neuropeptides calcitonin-gene-related-peptide (CGRP) and substance-P (SP).

- **Phillips et al., (1993),** Proved the effect of powdered ginger root was compared with metoclopramide and placebo. In a prospective, randomised, double-blind trial the incidence of postoperative nausea and vomiting was measured in 120 women presenting for elective laparoscopic gynaecological surgery on a day stay basis. The incidence of nausea and vomiting was similar in patients given metoclopramide and ginger (27% and 21%) and less than in those who received placebo (41%). The requirement for postoperative antiemetics was lower in those patients receiving ginger. The requirements for postoperative analgesia, recovery time and time until discharge were the same in all groups.
Alex et al., (2010), proved Cough is a common and distressing symptom in lung cancer patients. The clinical management of cough in lung cancer patients is suboptimal with limited high quality research evidence available. The aim of the present paper is to present a clinical guideline developed in the UK through scrutiny of the literature and expert opinion, in order to aid decision making in clinicians and highlight good practice. Two systematic reviews, one focusing on the management of cough in respiratory illness and one Cochrane review specifically on cancer, were conducted. Also, data from reviews, phase II trials and case studies were synthesized.

Sampath et al., (2010), studied Indian traditional herbs Adhatoda vasica and its Medicinal application Vasaka is a well-known herb in indigenous systems of medicine for its beneficial effects, particularly in bronchitis. Vasaka leaves, bark, the root bark, the fruit and flowers are useful in the removal of intestinal parasites. Vasaka herb is used for treating cold, cough, chronic bronchitis and asthma. The decoction of its root and bark in doses of 30 grams twice or thrice a day for 3 days can be given for this purpose. The juice of its fresh leaves can also be used in doses of a teaspoon thrice a day for days.