

Maintaining the Quality of Life using Diakof in Symptomatic Relief of Persistent Cough

Kala Suhas Kulkarni, MD

Medical Advisor, R&D Center, The Himalaya Drug Company, Makali, Bangalore (India)

ABSTRACT

An open clinical trial was conducted in 40 patients suffering from persistent cough for more than 3-4 weeks duration at a medical camp organised in a village near Bangalore. All the patients were subjected for symptom-score analysis to evaluate the clinical efficacy of Diakof Linctus. They were also subjected for quality of life symptom-score evaluation to determine the effect of treatment on the maintenance of the quality of life. Diakof Linctus at a dose of 2 teaspoonfuls, twice daily for 2-4 weeks produced significant relief in cough, thus preventing the recurrence of cough. Diakof Linctus also helped to minimise the psychosocial, emotional and physical behavioural alterations produced by chronicity of cough. In this study, it was observed that post-nasal discharge was a frequent cause of chronic cough, which was relieved with Diakof Linctus. Diakof Linctus is a sugar free formulation, which would benefit diabetic individuals as there would be no alterations in the fasting and post-prandial blood sugar while using Diakof linctus.

INTRODUCTION

Cough is a defense mechanism for clearing secretions and inhaled noxious substances from the tracheobronchial tree. Coughing may be voluntary but is more often the result of an involuntary reflex response to stimulation of cough receptors in the airways. The cough reflex is quite complex and is not yet completely understood. A variety of peripheral sites are connected to the cough center in the medulla, including the nose, auditory canal, nasopharynx, larynx, trachea, intrapulmonary bronchi and pleural surfaces. The stimulation of receptors in these sites can result in cough¹.

Chronic cough is defined as a cough that lasts for more than three weeks. More than 90 percent of cases with chronic cough result from five common causes, which include smoking, postnasal drip, asthma, chronic bronchitis and gastroesophageal reflux. Although in most patients chronic cough has a single cause, in upto one fourth of patients, multiple factors contribute to the cough.

In the nonsmoking population, persistent cough is reported to occur in a significant number of patients^{2,3} and is a frequent reason for visits to primary care physicians⁴. The incidence of chronic cough caused by smoking is directly related to the number of cigarettes smoked per day. Approximately 25% of those who smoke one half pack per day report a chronic cough, while over 50 percent who smoke more than two packs per day have a chronic cough. In patients referred to a pulmonary clinic for chronic cough, a study concluded that in 94 percent of patients, chronic cough was caused due to four conditions: postnasal drip, asthma, chronic bronchitis or gastroesophageal reflux⁵.

Thus, the clinical efficacy and positive effect to maintain the quality of life in patients with chronic cough of prolonged duration using Diakof Linctus was evaluated.

MATERIAL AND METHODS

A free medical camp was conducted at a village in Bangalore. The camp was especially organised to identify the patients with chronic cough. The survey questionnaire consisted of the following questions:

1. Paroxysmal cough
2. History of seasonal exacerbations of cough
3. Type of cough (barking, honking and whooping)
4. Productive cough (the amount of phlegm, muco-purulent or purulent sputum)
5. Haemoptysis
6. Nocturnal cough
7. Post-prandial cough
8. Cough on awakening in the morning
9. History of allergic manifestations (associated asthma, bronchitis)
10. History and intensity of smoking.

Each of the above questions was given a symptom-score of 2. Therefore, maximum score would be 20 and minimum would be 2 for every patient.

SELECTION OF PATIENTS

Forty patients in the age group of 35-50 years of either sex with the duration of cough being more than 3-4 weeks and symptom-score of more than 10 were selected for the study. All the patients underwent complete physical examination including the ear, nose and throat examination to confirm post-nasal discharge. They were subjected for chest and sinus radiograph to determine the severity of pulmonary involvement including the nasal mucosa.

To evaluate for maintaining the quality of life, another symptom-score was adopted as in the Table 1.

After confirming the diagnosis of persistent cough, all the patients were administered Diakof Linctus at a dose of 2 teaspoonfuls, three times daily for 2 weeks. Patients were examined twice a week for 2 weeks. The patients, who did not get significant relief in cough, within 2 weeks, were requested to continue the medication for 2 weeks. Thus, the duration of treatment with Diakof consisted for minimum 2 weeks and maximum 4 weeks.

Symptoms	Score : 1	Score : 2
Severity of cough	Mild to moderate	Severe
Frequency of cough	<8 bouts/day	8-12 bouts/day
Breathlessness	Moderate	Severe
Bronchospasm	Discomfort	Wheezing
Low grade fever	Intermittent	Continuous
Absenteeism at work place	Occasional	Every week
Feeling of well-being	Satisfactory	Excellent
Recurrence of cough	Headache and insomnia	Hoarseness of voice
Maximum score would be 16 and minimum would be 1		

Reduction in the symptom-score of <4 was considered as optimum efficacy and improvement in the quality of life.

RESULTS

Majority of patients had post-nasal discharge, which was manifesting as frequent clearing of throat, mucoid and mucopurulent discharge, suggesting an evidence of chronic sinusitis. Sinus radiograph confirmed the evidence of mucosal thickening in affected individuals.

The average symptom-score was 14, which was reduced to 8 within 2 weeks and 4 within 4 weeks. The average symptom-score for quality of life was 10, which was reduced to 4. Both the symptom-score showed significant reduction with Diakof Linctus suggesting the clinical efficacy in affected individuals with chronic cough and at the same time the early relief in cough, relief in hoarseness of voice and prevention of recurrence indicates the maintenance of quality of life with Diakof Linctus.

More than 65% of patients reported a history of seasonal allergy, which was responsible for exacerbations in cough of chronic nature. The treatment with Diakof relieved cough in 60% individuals within 2 weeks. The remaining patients found significant relief in cough after continuing the treatment. Hoarseness of voice was also relieved with Diakof Linctus.

Severity and frequency of cough were significantly reduced in 70% of the patients. Patients with a history of allergy and bronchospasm showed relief while continuing treatment. There was a significant feeling of well being and absence of low grade fever. The recurrence of cough was also minimised, hence there were no absenteeism at work place. These properties indicate the maintenance of quality of life in chronic cough.

DISCUSSION

In a survey conducted at the camp, post-nasal drip syndrome and chronic sinusitis were very common causes of chronic cough in the patients. Chronic cough is known to produce tremendous physical and emotional morbidity in patients. In elderly patients prolonged duration of cough can affect the pulmonary functions and the risk of developing opportunistic infections are also higher.

Diakof Linctus contains major constituents as *Balsamodendron mukul*, *Ocimum sanctum*, *Hyssopus officinalis*, *Tinospora cordifolia*, *Adhatoda vasica*, *Myristica fragrans*, *Glycyrrhiza glabra*, *Solanum xanthocarpum*, Trikatu and Navasagara. *Adhatoda vasica* possesses potent bronchodilator activity demonstrated *in vivo* and *in vitro* experiments. The studies on *Adhatoda vasica* substantiate the beneficial effects of vasaca in the treatment of respiratory disorders claimed in the Indian medicinal literature^{6,7}. *Solanum xanthocarpum* exhibits expectorant property, which has been used to treat chronic cough and asthma. This also possesses anti-inflammatory property, which gives relief to the inflammation in ear, nose and throat⁸⁻¹⁰. *Glycyrrhiza glabra* has significant anti-inflammatory and anti-allergic activities. It also stimulates immunity, the property beneficial in patients with compromised immuno-

functions and refractory cough^{11,12}. *Tinospora cordifolia* is a potent rasayana and rejuvenating agent possessing antibacterial, anti-inflammatory and anti-allergic activity, which has been confirmed in the clinical trials¹³⁻¹⁷. *Balsamodendron mukul* has expectorant property beneficial for productive cough to liquefy the thick mucoid sputum¹⁸. *Myristica fragrans* has anti-inflammatory and antibacterial properties¹⁹. Thus, the various constituents of Diakof Linctus produce synergistic effect to relieve cough, which is of prolonged duration and of recurrent nature.

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