

## Management of Asthma

R. Vincent Davis, DC, PT, DNBPM

Asthma is a bronchial hypersensitivity disorder characterized by reversible airway obstruction produced by a combination of mucosal edema, constriction of bronchial musculature, and excessive secretion of viscous mucus which results in mucous plugs which become progressively inspissated. Essential elements of diagnosis include recurrent, acute attacks of dyspnea, cough, and mucous sputum, usually accompanied by wheezing with prolonged expiration. There is generalized wheezing and musical rales.

Clinically, it is necessary to ensure that wheezing is not due to bronchitis, obstructive emphysema, or congestive heart failure. In these conditions, relaxation of the smooth muscle of the bronchial wall is not a component of the pathophysiology.

If patients are experiencing status asthmaticus at the time of examination, they should be hospitalized, especially if arterial blood gases dictate such care.

If the patient is not status asthmaticus, the initial modality of choice is interferential current. This modality selection is only acceptable in the absence of a history of cardiac disease, in which case it should not be used. In the absence of such a history the patient should be placed in a seated position. Two electrodes should be positioned over the upper limits of the trapezius bilaterally on the upper back, and the other two should be placed anteriorly over the lower ribs. In the event that the patient is experiencing respiratory difficulty while the treatment is being prepared, they should sit, leaning forward, with arms supported on a table. In this event, two electrodes should be placed anteriorly over the lung apices bilaterally, and the other two should be placed posteriorly over the lower ribs. This will cause the intersectional point of the interferring currents to be located at approximately the hilar region of the lungs.

Whether using a 4,000 Hz, 5,000 Hz, or 10,000 Hz base current, the interferential current range should be set from 10 to 150 Hz and initially applied for 10 minutes, being careful to monitor the patient's condition during the treatment period. If the patient presents any sign of distress during the course of treatment, the current must be turned off. In spite of this cautionary note, this is an effective method of aborting the severity of an asthmatic experience when properly applied. So long as the patient experiences no distress with IFC application, the treatment period should be increased by two minutes, with each application up to a total application time of 20 minutes.

During and following a course of treatment, the patient's breathing should become easier. Repeated treatments should result in a reduction in the frequency of acute attacks. Additionally, an acute attack is not a contraindication for this application. In fact, it is probable that the administration of IFC during an acute attack may negate the episode entirely.

When not in an acute episode, asthma patients may benefit by the performance of percussion chest postural drainage procedures. These procedures may be found in standard textbooks of physical medicine, or may be obtained by contacting this author.

Patients with much viscus bronchial mucus, especially when mucous plugs are undergoing

inspissation, should be directed to force oral fluids. Increased daily oral fluids will help to liquefy bronchial secretions making them easier to discharge with postural drainage and expectoration by coughing.

### *References*

Davis RV: Therapeutic Modalities for the clinical Health Sciences, ed 1. Copyright -- Library of Congress, TXU-389-661, 1983.

Griffin JE, Karselis TC: Physical Agents for Physical Therapists, ed 2. Springfield: Charles C. Thomas, 1982.

Krupp & Chatton: Current Medical Diagnosis & Treatment. Lange Publishers, 1983.

Krusen, Kottke, Elwood: Handbook of Physical Medicine & Rehabilitation, ed 2. Philadelphia: W.B. Saunders Company, 1971.

Schriber WA: A Manual of Electrotherapy, ed 4. Philadelphia: Lea & Feibiger, 1975

R. Vincent Davis, D.C. B.S.P.T., D.N.B.P.M.E.  
Independence, Missouri

MARCH 1992