PHYSIOTHERAPY

The aims of treatment are to achieve bronchodilation, to remove any secretions present and to teach the patient how to control his breathing in various relaxed positions. Children may require posture exercises.

It is helpful to assess patients before and after physiotherapy by means of a peak flow meter or a Vitalograph. Many outpatients will get a measurable response to a bronchodilator given by means of a pressurised aerosol, providing they are using the device correctly. Patients who do not get a good response are frequently using the device incorrectly and it is impor-

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The physiotherapy techniques used in the treatment of asthma, chronic bronchitis and emphysema are very similar, but their application in the treatment of these diseases is totally different. For this reason the diseases will be dealt with separately.

Asthma

Physotherapy may be ordered for asthma patients whose condition will vary from the person in status asthmaticus to someone completely free of asthma at the time of treatment.

The type of patient seen by physiotherapists in out-patient departments will vary from a young child to the older individual with more chronic disease. It should not be necessary for outpatients to attend for long periods of treatment, since the rôle of the physiothera-

aerosolized bronchodilators, and help the patient to cough and clear secretions, but she should have a place in helping to educate patients about their disease and the use of their various drugs, particularly broncho-

dilators. The role of the physiotherapist in asthma is to educate the patient and his relatives in how to cope with his condition at home. It may be necessary to treat the patient subsequently for limited periods of time during acute exacerbations, but if the patient has been correctly trained by the physiotherapist, he should be able to cope on his own for most of the time.

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PHYSIOTHERAPY IN OBSTRUCTIVE AIRWAYS DISEASE

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aerosolized bronchodilators, and help the patient to cough and clear secretions, but she should have a place in helping to educate patients about their disease and the use of their various drugs, particularly broncho-

dilators. Her role in comforting and reassuring her patient with severe asthma in the hospital setting must not be underestimated and she can make a real contri-
butution in this area. It is now well-known that vigorous chest physiotherapy is dangerous during severe asthma and is seldom required between attacks. Gentle per-
cussion and tipping may be of some value in patients with excessive secretions associated with complicating bronchiectasis. Breathing exercises in themselves are of limited value but provide a basis for inter-reaction between patient and therapist which leads to increased patient confidence. The physiotherapist should be familiar with the Wright's Peak Flow Meter and the Vitalograph and she should use these routinely to assess the results of the bronchodilator therapy she is administering to her patient.

DEATH FROM ASTHMA

Although death from asthma was thought to be un-
common at the turn of the century it is now widely ac-
cepted that not only does death occur from asthma, but that in many cases this may be preventable. One of the striking features which has been emphasized recently is how inadequate the assessment and treat-
ment of asthma has been in many patients dying of asthma. Improvement in assessment and treatment of patients with acute asthma and improvement in inter-
val management of the many asthmatics in our popu-
lation will require education of doctors, physio-
therapists and patients about the disease, and the provision of adequate staff and facilities.

CONCLUSIONS

Asthma is a common disorder. It produces a great deal of suffering and a not inconsiderable mortality. Our understanding of the condition has advanced greatly in the last decade, and the benefit of our improved knowledge now needs to be translated into patient care, not only in specialised units, but through-
out all health care services.

PHYSIOTHERAPY

What is the role of the physiotherapist in asthma? She is, in my view, a vital person in the treatment of the asthmatic patient. Not only should she deliver wet
ment repeated four hours later. Until bronchodilatation has been achieved, the physiotherapist should ensure that the patient and his relatives know how to manage at home. Once bronchodilatation has been achieved, gentle physiotherapy can be commenced in order to mobilise secretions. A bronchodilator should be given before physiotherapy and it is helpful to instil normal saline into the endotracheal tube during treatment. Initially the patient should be turned onto alternate sides and gentle chest shaking performed on expiration in time with the ventilator. If this does not have a detrimental effect, which will be shown by increased inspiratory pressure on the ventilator, manual hyperinflation can be attempted. If any signs of increased bronchospasm become apparent, the treatment must be modified. Once the patient has been extubated, treatment will be continued as before.

**Chronic Bronchitis**

The main problem in chronic bronchitis is hypersecretion of mucus and the primary aim of physiotherapy is to assist in removal of his secretions. As the disease progresses, the patient may develop secondary emphysema and will require help with control of breathing. Physiotherapy should be adjusted to cope with the dominant factor.

In the early stages of the disease, these patients will be seen in outpatient departments and the main aim of physiotherapy is to teach the patient how to clear his secretions and to try to increase his exercise tolerance. If the patient is dyspnoeic, positions of relaxation with breathing control can be helpful and the patient should be taught how to control his breathing when walking uphill or on stairs. As in asthma, these patients should attend for treatment in order to learn how to cope on their own at home and should only attend subsequently during acute exacerbations of their disease.

If the physiotherapist is able to devote time to educating these patients and their relatives in how to manage at home, rather than treating numerous chronic outpatients for unlimited periods of time, much will have been achieved.

It may be helpful to get an outpatient to use a bronchodilator before giving postural drainage. It is important to teach the patient how to clear his secretions each day at home and to show him how to tip himself into alternate side lying and place pillows under his shoulders in order to tilt the thorax. If relatives are willing to help, they should be shown how to percuss and shake the chest wall.

It is important for patients with chronic bronchitis to take exercise, and a simple means of doing this is to give the patient a certain distance to walk or a number of stairs to climb each day and to gradually increase the time and distance: e.g. to walk up and down five steps for two minutes and gradually increase the time and then the distance (McGavin et al, 1977).

Patients who are dyspnoeic should be taught breathing control as for asthma and it is important to teach controlled rhythmic breathing on stairs and hills (e.g. out for two steps and in for one step). The main aim of outpatient physiotherapy is to educate the patient and his relatives in home management. Long-term treatment is not necessary, although the patient should be able to return for further treatment if a fresh infection occurs.

Patients admitted to hospital with acute exacerbations of chronic bronchitis will require vigorous physiotherapy to assist in removal of secretions. Although many of them may be suffering from cor pulmonale, once a suitable medical regime has been established, this should not be a deterrent to giving postural drainage and most patients will tolerate this. It is often
helpful to give a bronchodilator prior to physiotherapy and certain patients will benefit from additional humidity. If the patient has difficulty in mobilising his secretions and becomes exhausted during physiotherapy, it may be helpful to use I.P.P.B. during postural drainage for a limited period. Most patients will be able to manage with a mouthpiece but if they are confused or unco-operative, the use of a mask may be necessary. If a mask is used and the patient is semi-comatose, it is important to ensure that the chest wall is moving adequately, otherwise CO₂ can build up in the mask. It is important to adjust the pressure and flow rate of the machine correctly in order to achieve chest wall movement. The patient can be given postural drainage while I.P.P.B. is being used and the chest wall shaken on the expiratory phase. This is often very effective in the mobilisation of secretions. Treatments should last about twenty minutes and be repeated two-hourly initially. If the patient does not cough spontaneously, it may be necessary to carry out nasopharyngeal suction during treatment. Vigorous and effective physiotherapy can often prevent the need for intubation of these patients.

On the rare occasions that such patients are intubated and ventilated, physiotherapy, consisting of manual hyperinflation combined with chest shaking and postural drainage, should be commenced as soon as the patient has stabilised on the ventilator. The aim is to clear the secretions as quickly as possible in order to avoid tracheostomy and long-term ventilation.

Emphysema

The main aim of physiotherapy for emphysema is to teach the patient a more co-ordinated and controlled pattern of breathing, to teach positions of relaxation that he can use when dyspnoeic, to try to increase exercise tolerance, although this will probably be limited, and to deal with infections when they occur.

Controlled diaphragmatic breathing with relaxed expiration should be taught in high side lying and forward lean sitting; this can progress to the use of the upright position, and eventually the patient should be able to breathe in this manner when standing or walking about, although this may take time. Some emphysematous patients get a certain amount of response from a bronchodilator and, if so, this should be given before physiotherapy.

A programme of graduated walking should be worked out for each individual as for chronic bronchitis, but an emphysematous patient will be limited in the amount he can do. Very severely disabled patients are sometimes helped by a high walking frame and an oxygen cylinder can be attached to it if necessary.

Many emphysematous patients have problems with bathing and dressing, and advice from an occupational therapist on these aspects can be invaluable.

The majority of emphysematous patients do not have a large amount of secretions and these can usually be cleared by shaking the chest wall in high side lying or lying flat on alternate sides if the patient will tolerate it. Because of their flattened diaphragms, the majority of emphysematous patients are unable to tolerate tipping. There is a tendency for them to get airway shutdown whilst coughing which can sometimes result in cough syncope; the patient should be instructed to take another breath in after every two or three coughs.

If a patient has difficulty in mobilising his secretions, I.P.P.B. combined with chest shaking may be helpful, but the inspiratory pressures should be kept lower than normal and it is contra-indicated if any large bullae are present.

In conclusion, the role of physiotherapy in the treatment of obstructive airways disease is to educate the patient and his family in how to manage at home and to treat any subsequent acute exacerbations that occur either in hospital or as a short-term outpatient.

References