if possible, not immediately after a meal; that the frequency should be stepped up if the secretions increase, and that one treatment per day is enough if the child's cough is unproductive. In the case of a young child who only shows signs of mild pulmonary involvement, we advise that a short programme of postural drainage and "breathing exercises" should be carried out once a day. This is to customise the child to the treatment so that it becomes simply a part of his daily life. Hopefully, this approach will make it easier for the child to accept the treatment when it really becomes necessary.

We stress the importance of physical activity — any activity appropriate to the age of the child. This is both for the purpose of mobilising secretions and producing a cough, and for the sense of well-being that any such activity almost inevitably brings, provided of course that it is done within the limits of the child's capacity. Without having done any controlled studies on this subject, it is difficult to say whether a "well cystic" jogs because he is well, or whether jogging makes a "cystic" well.

Another of our responsibilities is to instruct the mothers in infection control, teaching them how to clean the equipment used so as to minimise the danger of reinfection. With more and more "cystics" surviving into their teenage years it is becoming of paramount importance to investigate, and teach ways of helping the teenager to clear his own lungs, thus securing, as far as possible the independence so necessary for the transition from adolescence to adulthood. These methods include self-nebulisation, self-postural drainage using the forced expiration technique, possibly mechanical percussions, and self-assisted coughing, such as coughing against a closed glottis. It has been suggested that vigorous and self-directed coughing may be all that is required for effective bronchial toilet.

Contact with the child on admission to hospital for treatment of an acute infection is often a time when the role of physiotherapy can be reinforced. Here again, the actual physiotherapy treatment is simple, but it is complicated by the fact that the child has, in a sense, become a product of his disease in terms of his behavioural responses to it. No child can actually enjoy being hooked up to an intravenous drip, being tipped, percussed and made to cough vigorously, and the "cystic" children are no exception. As with any child who has a chronic debilitating and socially unacceptable illness, resentment and lack of co-operation may often be present. These behaviour patterns should be recognised for what they are, and we should try, if necessary with the help of the psychiatrist attached to the team, to secure the co-operation of the child. All of this means that we are not dealing with a child who simply requires "chest physiotherapy". We have found that one must set achievable goals, depending on the child's condition at that moment, and then very firmly and gently, insist on his co-operation. It is also very necessary to allow the mother to participate in the care of her child, while still ensuring that she has the rest that she needs as we take over the responsibility for clearing his chest.

Finally, in the terminal stages of the disease, the physiotherapist's role should become more supportive. Physiotherapy should not be withheld but should be tempered with the understanding that one's role now is to try and achieve maximum comfort for the dying child.

In this paper it is obviously impossible to go into the methods of physiotherapy employed in each of the age groups of children suffering cystic fibrosis. However, it is apparent that physiotherapy and the physiotherapist play central roles in the handling of children with cystic fibrosis. It is our hope that this article has helped in defining the extended roles of the physiotherapist and in outlining the pathophysiology of the lung disease associated with cystic fibrosis.

References

**TREATMENT NOTE:**

**A CASE OF INTRACTABLE PRURITIS VULVAE TREATMENT WITH PULSED ULTRASOUND**

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A 67-year-old married African woman was admitted to hospital on 6 April 1979 after a gynaecological investigation. Her main complaints were vaginal pain and itchiness of the vulva of 12 months duration. Pelvic examination showed atrophy of the labia and vaginal mucosa and a cervical polyp. A diagnosis of chronic vulval dystrophy and pruritis vulvae was made.

While an in-patient she was fully investigated for diabetes; glucose tolerance test suggested diabetes mellitus in a mild form. The polyp was removed under general anaesthetic and a vulval biopsy taken; this proved to be negative. The patient was discharged on 10 April.

She was re-admitted in May 1979 with a marked pruritis vulvae. At the time it was considered that this could have been aggravated by her diabetes so she was put on a diabetic reducing diet. In addition, local application of oestrogen to the vulva was tried, but to no effect. She was then referred to the Skin Clinic and steroid cream was prescribed. There was diminution of
the itch but it did not subside completely. After two weeks she was discharged with instructions to continue using the steroid cream.

The patient was again admitted to hospital on 26 March 1980, still complaining of the itch which had persisted during her time at home. The itch at this time was of such intensity that it caused her to scratch the vulva until it bled. She was again treated with steroid cream but without success. In the middle of April she was referred to the Physiotherapy department with a request for ‘Curapulse therapy’ (pulsed short-wave diathermy). The physiotherapist’s examination showed a depigmented area involving the labia, vulva, perineum and clitoral area. The patient’s main complaint was the intractable itch.

As the Curapulse was not available it was decided to try pulsed ultrasound. The patient was treated on four successive days. The first treatment consisted of pulsed ultrasound, in contact with the pruritic area, using glycerine as a coupling medium. The dose was 0.5 watt/cm² for 5 minutes. This resulted in some relief which lasted for 16 hours. The second treatment was given at the same intensity for 6 minutes and relief lasted for 20 hours afterwards. The third and fourth treatments were progressed by one minute in each case. After the third treatment the patient reported complete relief of the itch.

She was discharged from hospital on 19 April 1980, free of all symptoms and not needing topical application of steroid cream. She was given an open appointment to report back to the Physiotherapy Department should the symptoms recur.

A follow-up home visit one month after discharge revealed that mild pruritis had developed again 3 weeks after the patient’s discharge from hospital. Arrangements were made for a longer course of ultrasound to be given but unfortunately the patient’s husband refused to let her attend.

**DISCUSSION**

After the third treatment with pulsed ultrasound the patient reported complete relief of itch for the first time in two years.

In evaluating the treatment the placebo effect must be considered but can probably be discounted on the evidence that changes of treatment earlier did not produce any significant effect. Local application of oestrogen had no effect and steroid creams only a partial effect; at no time did they relieve symptoms completely.

Grönroos et al. (1979) reported on 25 patients who had various chronic vulval lesions with continuous pruritis, treated by pulsed short-wave therapy. Patients were given 10-15 single treatments with intervals of two days. The beneficial effect of this therapy was either definite or good in 80% of all the cases. The writer has found no reference to the use of pulsed ultrasound in the treatment of chronic pruritis vulvae. The notion to use this modality was based on the fact that insonation with ultrasonic energy results in reduced conduction velocity in nerve. Thus it can be used in its pulsed form to treat painful conditions, particularly those which have reacted adversely to the application of heat (Wadsworth and Chanmugan, 1980). Presumably pain relief is due to reduced conduction velocity in nerves carrying pain impulses. Stimuli which give rise to itch are carried mainly in the slow conducting, unmyelinated C fibres, and it has been postulated that pain fibres carry the sensation of itch in the spinothalamic tract and hence to the thalamus (Lotnicz, 1971). The findings of Yamamoto et al. (1981) suggest that clinically, the sensations of itch and pain are closely related. Itch is usually made worse by increased local temperature, however with pulsed ultrasound the treatment is relatively athermic.

Without its thermal influence, the effect of ultrasound is mainly mechanical; it could be speculated that the Gate Control Theory of Melzack and Wall (1965) could help to explain the relief of itch experienced by the patient. Glycerine which was used as the coupling medium is a clear, colourless syrupy liquid used as a moistening agent and a solvent for certain drugs; it is not known to have any anti-pruritic properties.

The troublesome and often distressing condition of pruritis vulvae can be resistant to a wide range of conventional treatments. Alternative approaches using pulsed short-wave diathermy and the more easily applied pulsed ultrasound may prove beneficial. It is intended to study further the effects of pulsed ultrasound in the treatment of chronic pruritis vulvae.

**Acknowledgement**

I wish to thank Mrs. L. Gumede, Lecturer in Physiotherapy and the Staff of the King Edward VIII Physiotherapy Department for their assistance with this case.

**References**


**REPORT ON FOURTEENTH GENERAL MEETING OF THE NATIONAL COUNCIL OF THE SOUTH AFRICAN SOCIETY OF PHYSIOTHERAPY HELD ON 27th & 28th MARCH 1981 IN PRETORIA**

Office Bearers, members of the National Executive Committee, Branch delegates, representatives on National and International Organisations, members of the Professional Board and various observers attended the 14th National Council Meeting.

Mrs. M. Mathias, Chairman, introduced Professor F. G. Geldenhuys, President of the South African Medical and Dental Council, President of the South African Medical Association and Dean of the Faculty of Medicine, University of Pretoria. In his opening address Professor Geldenhuys explained the relationship between Medical Council and the Professional Board, and outlined the developments since 1947, when the register was first established. The Board was established in 1972, the scope of the profession gazetted in 1977, the whole country prescribed in 1979 and a Tariffs Committee had just completed its hearing. The President, Mrs. M. Levy, thanked Professor Geldenhuys and then delivered her Presidential address. Mrs. Mathias paid tribute to the memories of Professor B.