TREATMENT OF PALMOPLANTER HYPERHIDROSIS BY IONTOPHORESIS

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ABSTRACT

Twenty-seven patients with idiopathic palmoplanter hyperhidrosis were treated with Iontotherapy over a one year period. In twenty-four cases there was a good response but maintenance therapy was required every 3-4 weeks.

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KEY WORDS: Iontophoresis; Palmoplanter hyperhidrosis.

Introduction

Hyperhidrosis or excessive sweating is most commonly confined to the palms and soles. This frequently begins at puberty and has no definite aetiology. The disease has an unpredictable course and may persist for several years [1]. It is often a cause of social embarrassment and a disability at work, play or studies. Apart from the embarrassing nature of the disorder, complications include pompholyx and contact dermatitis.

A large number of therapeutic options have been used for the treatment of hyperhidrosis. The medical treatment is ineffective in all but the mildest of cases [2]. Further more, some of these are irritating and cause staining of the skin. Sympathectomy, though effective has too many potential complications to be a viable alternative [3,4]. This prospective study was carried out to evaluate tap water iontophoresis in the treatment of palmoplanter hyperhidrosis.

Material and Methods

Twenty-seven patients with palmoplanter hyperhidrosis were treated with Iontophoresis therapy at Military Hospital Meerut Cantt over a one year period. Of these, sixteen had hyperhidrosis of the palms, eight had involvement of both palms and soles and three of soles only. Individuals with pregnancy, cardiac or respiratory disorders were excluded from the study.

The Iontophoretic apparatus consisted of a source box of D.C. current with volt meter, amperage meter and two flat metallic plates as electrodes.

The patient was apprised of the procedure. It was ensured that no cuts/abrasions were present on the hands or feet. Rings/bracelets worn by the patient were removed. The hands or feet were placed simultaneously in the shallow plastic trays containing enough tap water to cover them. The machine was then switched on at the minimum current, the current was slowly increased until the patient felt mild discomfort and then it was allowed to flow. The first treatment was based on the size of the patient and skin tolerance with the average being 5-10 amps x 10 minutes. At the end of the period the polarity was reversed and current passed for an equal time period. Initially the patients were treated on alternate days. Once control was achieved the interval was gradually increased to a maximum of 4 weeks. Patients having palmoplanter hyperhidrosis were first treated for the palms only and on achieving remission, the soles were treated.

Results

Seventeen of the subjects noted the onset of hyperhidrosis in early adolescence. Five patients gave a family history of the disorder. Their age ranged from 14-42 years with mean of 27 years. 12 patients gave a history of aggravation of sweating with emotional stress.

In 14 cases there was marked improvement within 2 weeks of therapy while in 10 others relief was obtained after 4 weeks of treatment. In 3 cases there was no change evident after 6 weeks and were considered to be refractory to the treatment modality. Side effects were few and mild. Three patients developed transient vesiculation of the palms. Twelve patients complained of itching in the treated parts during the 2-3rd week of therapy. Seven patients complained of dryness of the skin in the later part of therapy but were well controlled with application of petrolatum jelly. None of the patients experienced compensatory hyperhidrosis. The adverse effects did not warrant discontinuation of therapy in any of the patients.

Discussion

Iontophoresis (Gr. Introduction of ions) is defined as the introduction of an ionized substance through intact skin by the application of direct current.

In 1936, Ichihanshi demonstrated that sweating of the palms could be reduced by Iontophoresis [5]. His work went largely unnoticed until 1952 when Bouman and Grunewald Lentzer demonstrated that the addition of an ionizable material to the water was not necessary to obtain a therapeutic effect. Levit published two reports in 1968 and 1980 exalting the efficacy and sim-

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plicity of tap water Iontophoresis for the treatment of hyperhidrosis [6].

The mechanism by which iontophoresis reduces sweating is not known [7]. There are currently two accepted theories-the Electric gradient theory hypothesized that iontophoresis disturbed the normal movement of sweat along the sweat duct which flows due to an ionic gradient. The second "Plug theory" postulates that the sweating is inhibited through mechanical blockage of sweat at the level of the stratum corneum, the depth and severity of obstruction being dose related [8]. However both theories have their fallacies with no definite conclusion [9].

This study clearly demonstrates the efficacy of tap water iontopheresis in the treatment of palmoplanter hyperhidrosis. 24 of 27 patients found it to be dramatically effective for the control of excessive palmoplanter sweating. The adverse effects were mild and did not warrant discontinuation of therapy in any patient. Majority of the patients found the maintenance programme compatible with their life style. Limitations of this report are its unicentric study group and lack of quantification of results. Treatment of axillary hyperhidrosis was not included in the study.

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