

# Easing excessive sweating



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Hyperhidrosis can cause significant physical and psychological morbidity.

## CLINICAL SCENARIO

A 28-year old male presents with excessive axillary sweating since his teens. He is very conscious of the constant 'wet patch' in his underarms throughout the day (figure 1). The sweat drips down the torso and dampens the clothing to the point where he will only wear black shirts to hide the sweat stains. No deodorants or antiperspirants control the sweating. What is he suffering from and how would you manage him?

## ESSENTIAL HYPERHIDROSIS

Essential hyperhidrosis (EH) typically targets the axillary and palmo-plantar areas (figure 2), where the sweat gland density is highest. There are 2–5 million eccrine sweat glands on the skin surface that can secrete at a rate of 3–4 litres per hour, so EH sufferers are literally dripping with sweat. Usually one location (either the axillae or palms/soles) tends to be the predominant site.

EH studies have not identified any sweat gland pathology nor any changes in sweat gland sensitivity to autonomic stimulation. There is however increased neural stimulation of the target sweat glands signalling increased sweat output. Consequently baseline sweating is increased, worsens with emotional stress, and only stops during sleep.

By contrast, secondary hyperhidrosis can result from chronic illness, endocrine and metabolic disorders (e.g. thyroid, diabetes, menopausal), infection, malignancy (lymphomas), medications, and an important point of difference is that secondary hyperhidrosis does not stop during sleep.

Although axillary EH are usually not malodorous, patients tend to feel extremely self-conscious about the constant dampness and may actively avoid socialising or forming close relationships. Secondary anxiety and depressive disorders are common with EH.



Figure 1: Axillary hyperhidrosis

Palmar hyperhidrosis affects grip and interferes with handling of paper documents (soaked) and keyboards (slippery). Plantar hyperhidrosis in occlusive footwear predisposes to maceration and secondary fungal and micrococcal skin infections and may become malodorous.

## TREATMENT OPTIONS

Topical aluminium chloride (Dri-clor, 20% AlCl<sub>3</sub> hexahydrate) is the first-line treatment for most cases of EH especially in the axillary region.

The AlCl<sub>3</sub> blocks the sweat ducts to decrease the sweat output. The lotion is applied to the affected area before bedtime every night (washed off in morning) for the first week then maintained at once or twice a week. Potential skin irritation and lack of efficacy (in palms and soles) are the limiting factors.

Oral anticholinergic agents (e.g. Pro-Banthine, starting at 15mg tds) can be useful for hyperhidrosis, especially generalised hyperhidrosis. Unfortunately at therapeutic dosages, many patients are unable to tolerate the predictable anticholinergic effects of dry mouth, blurred vision and urinary retention.

Iontophoresis involves the soaking hands and feet in tap water that is charged with a weak electric current.

Affordable home devices are now available for convenient self-administration. A typical schedule

is 20 minutes, three times a week for the first six weeks followed by weekly maintenance.

Botulinum injections have gained widespread acceptance as a safe and effective option for localised hyperhidrosis. They are administered through multiple injection points at each site and can stop sweating for 6–9 months. Transient weakness in grip can occur when treating the palms. The recurring cost (without PBS subsidy) is a potential barrier.

Surgical options such as sympathectomy and sweat gland liposuction/ excision are considered in refractory cases. Endoscopic sympathectomy involves cutting the appropriate ganglion to stop innervated sweating (T2 for face, T3 for axillae and hands). Side effects include compensatory sweating elsewhere, Horner's syndrome (thoracic sympathectomy), pneumothorax and sexual dysfunction (lumbar sympathectomy).

## CASE DISCUSSION

The patient initially tried topical Dri-clor without sufficient benefit. Anticholinergics were added but he could not tolerate the side effect (blurred vision). The Botulinum option was initially discussed but put-off because of the high recurring cost. He was tested with the iodine-starch test, which showed significant sweating despite regular use of topical AlCl<sub>3</sub> (figure 3a,b,c).

Botulinum treatment can be administered under the PBS



Figure 2: Palmar hyperhidrosis



Figure 3: Iodine-starch sweat test.  
a. the hyperhidrotic area is painted with iodine  
b. the area is then coated in corn starch  
c. moisture produces a purple-black stain, which indicates the area of sweating.



indication for axillary hyperhidrosis in patients who have failed topical AlCl<sub>3</sub>. The patient tolerated the procedure extremely well and noticed a marked reduction in axillary sweating within a few days and was very pleased

with the outcome. There were no adverse effects from the botulinum injections and the axillae should remain dry for at least 6 months. Maintenance treatment is to be carried out on a 6 monthly basis.

## Key Facts: Essential Hyperhidrosis (EH)

- Incidence < 1%. M = F
- Typically localized to armpits, palms and soles
- No investigations required
- Associated with significant physical and psychological morbidity
- Triggered by heat and emotional stimuli
- Sweating stops during sleep
- Medical and surgical treatment options exist
- Generalized hyperhidrosis should prompt search for secondary causes eg endocrine disorders, lymphomas, drugs