Hyperhidrosis: Sweating Out the Details

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Hyperhidrosis (HH) remains a relatively unknown disorder to the general public and health-care professionals. According to the literature, 0.5% to 1% of the population is affected by HH. However, a recent survey held in the U.S. places that figure at 2.8%; thus, revealing that the prevalence is underrated. Among those affected, only 38% had discussed the problem with a health professional.1

HH may be classified as primary or secondary; either type can be localized or generalized. Table 1 lists the most commonly affected sites.

Impact on quality of life
HH is known to be a socially embarrassing and occupationally disabling disorder. Many patients suffer in silence. Figure 1 illustrates the impact HH has on quality of life.2

Those with axillary HH often have to change clothing several times a day and throw out clothing because of the damage caused to fabric and leather.

Patients who suffer from palmar HH are embarrassed to shake hands. Sweat can stain books and papers, make fingers slippery on computer keyboards, and even prevent the enjoyment of sports. Manual labour becomes difficult and workers are prone to injury due to dropped objects.

Besides affecting quality of life, HH predisposes its victims to a host of dermatologic disorders (Table 2). The control of HH would also control the associated disease condition, as has been recently reported with the treatment of dyshidrotic hand dermatitis with intradermal botulinum toxin.4

How is HH treated?
Systemic approach
Minor sedatives, such as amitriptyline and hydroxyzine, produce an anticholinergic, as well as a sedative, effect.

Anticholinergics
Glycopyrrolate, 1 mg to 2 mg twice or three times daily, produces side-effects (such as tachycardia, dry mouth, and lowered intestinal motility) that can be worse than the HH itself. Glycopyrrolate may also aggravate pre-existing problems, such as glaucoma or convulsions.

Table 1
Most commonly affected sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial</td>
<td>68.9%</td>
</tr>
<tr>
<td>Axillary</td>
<td>50.8%</td>
</tr>
<tr>
<td>Plantar</td>
<td>28.7%</td>
</tr>
<tr>
<td>Palmar</td>
<td>24.8%</td>
</tr>
</tbody>
</table>

Focus on CME at the Université de Montréal
Topical approach

Anticholinergics (topical glycopyrrolate)

Topical anticholinergics have been used successfully to control craniofacial HH. There are also anecdotal reports of
treating HH with indomethacin and diltiazem.

**Antiperspirants**

Antiperspirants decrease sweating by creating a “plug”, consisting of aluminum salts, in the acrosyringium. Aluminum chlorhydrate is the most commonly used ingredient in the majority of over-the-counter antiperspirants because it is relatively less irritating than aluminum chloride, which is the most potent of aluminum salts.

It is important to note that aluminum chloride may damage clothing and irritate the skin, especially when applied immediately after shaving. In such cases, hydrocortisone, 1%, can be used to reduce the irritation.

Aluminum chloride in a 4% salicylic acid gel base has been reported to be more effective and better tolerated than aluminum chloride in the alcoholic solution.

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**Table 3**

<table>
<thead>
<tr>
<th>Level</th>
<th>Site</th>
<th>Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Armpits</td>
<td>Over-the-counter antiperspirants containing aluminum salts 6.25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AlCl₃·6H₂O/in absolute ethanol: Drysol mild (Xerac AC)</td>
</tr>
<tr>
<td></td>
<td>Groin</td>
<td>12.5% AlCl₃·6H₂O/water based: CertainDri®</td>
</tr>
<tr>
<td></td>
<td>Forehead</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Armpits</td>
<td>20% AlCl₃·6H₂O/in absolute ethanol: Drysol®</td>
</tr>
<tr>
<td></td>
<td>Groin</td>
<td>10%-30% AlCl₃·6H₂O/in a gel with or without 4% salicylic acid</td>
</tr>
<tr>
<td></td>
<td>Hands</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feet</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Hands</td>
<td>40%-50% AlCl₃·6H₂O/in a 4%-6% salicylic acid gel base</td>
</tr>
<tr>
<td></td>
<td>Feet</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Armpits</td>
<td>Iontophoresis</td>
</tr>
<tr>
<td></td>
<td>Hands</td>
<td>Drionic</td>
</tr>
<tr>
<td></td>
<td>Feet</td>
<td>Fischer</td>
</tr>
<tr>
<td>5</td>
<td>Armpits</td>
<td>Botox® injections</td>
</tr>
<tr>
<td></td>
<td>Hands</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feet</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Armpits</td>
<td>Surgical excision of eccrine axillary glands</td>
</tr>
<tr>
<td></td>
<td>Hands</td>
<td>Endoscopic transthoracic sympathectomy</td>
</tr>
<tr>
<td></td>
<td>Feet?</td>
<td></td>
</tr>
</tbody>
</table>

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Iontophoresis

Iontophoresis is a technique whereby hands or feet are immersed in a tray of tap water through which a galvanic current is passed. The procedure takes 20 to 30 minutes a day, for a duration of at least 20 days, until the sweating stops. While helpful, the treatment is time consuming and some maintenance is required after completion. Glycopyrrolate could be added to enhance the procedure’s drying effect (Table 3).

Botulinum toxin type A

Localized intradermal injections of botulinum toxin type A, a neuromuscular paralyzing agent produced by the bacterium *Clostridium botulinum*, markedly reduces excessive sweating by blocking the release of acetylcholine from nerve fibres which stimulate eccrine glands.\(^5\)

Take-home message

- HH has been estimated to affect between 0.5% to 2.8% of the general population.
- Besides affecting quality of life, HH predisposes patients to a host of dermatologic disorders, including:
  - Hand dermatitis
  - Friction blisters
  - Trichomycosis axillaris
  - Pitted keratolysis, and
  - Hailey-Hailey
- Antiperspirants, iontophoresis, and botulinum toxin type A are all possible treatment options, depending on the severity of the condition.

1. Do the use of antiperspirants cause breast cancer?

According to the National Cancer Institute, there is no scientific evidence to support a link between antiperspirants and breast cancer.

2. Does aluminum chloride cause Alzheimer's disease (AD)?

Most researchers agree that there is not enough evidence to substantiate a claim that aluminum is either a risk factor for AD or a cause of dementia.

3. What’s the best time of day to apply an antiperspirant?

In the evening, because the glands are much less active during that time of day. Otherwise, excessive sweat, which contains mostly water, will form hydrochloric acid, which irritates the skin.

Surgical approach

While resection of the eccrine glands under the arms could control axillary HH, the procedure cannot be performed elsewhere on the body. Endoscopic transthoracic sympathectomy (ETS) should be used as a last resort because of

Frequently Asked Questions
compensatory HH (i.e., the occurrence of HH in other areas, such as the chest or back, which may become worse than the original site involved).

References

Net Readings
1. Canadian hyperhidrosis treatment centres  
   www.sweatmanagement.ca
2. International Hyperhidrosis Society  
   www.sweathelp.org
3. The Society of Thoracic Surgeons  
   www.sts.org/doc/4097
4. For more information on hyperhidrosis  
   www.hyperhidrosis.ca