



**ANTIPERSPIRANTS and DEODORANTS**

Aluminum salts are the common active ingredients used in antiperspirant preparations, aluminum chloride being the most potent of them. These agents act by:

- Reducing sweating
  - By mechanically obstructing the eccrine sweat ducts
  - Their main drawback: potential irritation of the easily irritated axillary skin
- Combating odors
  - By an antibacterial ingredient
  - And/or by a masking perfume

Aluminum chloride at high concentrations provides an antiperspirant effect while at low concentrations control odors due to its antimicrobial property.

The viscous sweat produced by the axillary apocrine glands mainly causes body odor or apocrine bromhidrosis. Apocrine sweat is odorless when freshly secreted, but it gradually becomes malodorous when bacteria decompose it. Axillary hyperhidrosis, when present, may dramatically reduce this type of bromhidrosis by constantly flushing the apocrine sweat. On the other hand, the presence of hyperhidrosis is almost a prerequisite for the development of plantar bromhidrosis (smelly feet).

Palmar and plantar hyperhidrosis represent a therapeutic challenge because of the thick horny layer covering their surface. The combination of aluminum chloride with salicylic acid (2 – 6 %), regardless of the synergistic action due to the antiperspirant property of each of them, offers

better penetration to the eccrine glands due to penetration enhancement of salicylic acid.

**Therapeutic ladder for axillary hyperhidrosis**

<ul style="list-style-type: none"> <li>• Over the counter preparations</li> <li>• Aluminum chloride preparations (6 – 30 % with or without 2-4 % salicylic acid in a gel)</li> <li>• Botox® injection (100 – 200 units per axilla)</li> <li>• Removal of underarm eccrine glands</li> </ul>	<p>Mild</p> <p>Severe</p>
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**Therapeutic ladder for palmoplantar hyperhidrosis**

<ul style="list-style-type: none"> <li>• Aluminum chloride (15 – 55% with or without 2 - 6% salicylic acid in a gel) Iontophoresis</li> <li>• Aluminum chloride + Iontophoresis</li> <li>• Botox® injections 100 – 200 units per palm 150 – 250 units per foot</li> <li>• Aluminum chloride + Iontophoresis + Botox®</li> <li>• Endoscopic Transthoracic</li> <li>• Sympathectomy for the hands</li> </ul>	<p>Mild</p> <p>Severe</p>
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