



Hyperhidrosis, bromhidrosis, and chromhidrosis: Fold (intertriginous) dermatoses

Kristina Semkova, MD^{a,*}, Malena Gergovska, MD^b, Jana Kazandjieva, MD, PhD^a, Nikolai Tsankov, MD, PhD^c

^aSt. John's Institute of Dermatology, London, Westminster Bridge Road, SE1 7EH, United Kingdom

^bEuro Derma Clinic, Sofia, Bulgaria

^cTokuda Hospital, Sofia, Bulgaria

Abstract Human sweat glands disorders are common and can have a significant impact on the quality of life and on professional, social, and emotional burdens. It is of paramount importance to diagnose and treat them properly to ensure optimal patient care. Hyperhidrosis is characterized by increased sweat secretion, which can be idiopathic or secondary to other systemic conditions. Numerous therapeutic options have been introduced with variable success. Novel methods with microwave-based and ultrasound devices have been developed and are currently tested in comparison to the conventional approaches. All treatment options for hyperhidrosis require frequent monitoring by a dermatologist for evaluation of the therapeutic progress.

Bromhidrosis and chromhidrosis are rare disorders but are still equally disabling as hyperhidrosis. Bromhidrosis occurs secondary to excessive secretion from either apocrine or eccrine glands that become malodorous on bacterial breakdown. The condition is further aggravated by poor hygiene or underlying disorders promoting bacterial overgrowth, including diabetes, intertrigo, erythrasma, and obesity.

Chromhidrosis is a rare dermatologic disorder characterized by secretion of colored sweat with a predilection for the axillary area and the face. Treatment is challenging in that the condition usually recurs after discontinuation of therapy and persists until the age-related regression of the sweat glands.

© 2015 Elsevier Inc. All rights reserved.

Human sweat glands (sudoriferous or sudoriparous glands) are subdivided into three main types—eccrine, apocrine, and apoeccrine—based on their different structure, anatomic distribution, function, secretory products, and mechanism of excretion.

Eccrine glands

Eccrine glands are distributed with varying density over the entire skin surface with the exception of the lips, ear canal,

prepuce, glans penis, labia minora, and clitoris. The glands are 10 times smaller than apocrine glands and open with a duct directly onto the skin surface. Eccrine sweat is a dilute salt solution that contains mostly water and electrolytes. The total volume of eccrine sweat depends on the number of functional glands in the respective area and the size of the surface opening. The degree of secretory activity is regulated by neural and hormonal mechanisms. At their maximum capacity, eccrine glands can produce more than three liters of secretions per hour.¹ Eccrine sweat has three primary functions: thermoregulation, excretion of electrolytes and exogenous substances, and protection as an important part of the skin barrier.

* Corresponding author.

E-mail address: kristina_semkova@yahoo.com (K. Semkova).

Apocrine glands

Apocrine glands are found in limited areas over the body, mostly in the axillary region, perineum, around the nipples, in the ears, and on the eyelids. They secrete small amounts of oily fluid that is excreted into the pilary canal of the hair follicle and not directly onto the skin surface. Apocrine sweat is initially odorless when excreted onto the skin but is soon degraded by the resident bacteria. Its breakdown products are responsible for the individual pheromonal body odor.²⁻⁴

Apoecrine glands

Apoecrine glands are a mixed type of sweat glands, as they simultaneously show features of the other two well-studied types.² They presumably develop during puberty from eccrine glands and can represent up to 50% of all axillary glands. Apoecrine glands continuously secrete a thin, watery sweat with similar sodium and potassium concentrations as eccrine sweat. These glands show a greater responsiveness to cholinergic and adrenergic stimuli than eccrine glands, and their overall sweat secretion rate is higher than that of other types of sweat glands. Due to this and to their abundance in the axillary region, it is believed that apoecrine glands are of paramount significance for axillary sweating.

Hyperhidrosis

Hyperhidrosis (also polyhidrosis or sudorrhea) is a common medical condition characterized by abnormally increased sweating, defined as sweat secretion that largely exceeds the quantity required for normal body thermoregulation. In patients with hyperhidrosis, sweat secretion may occur at low temperatures or at rest. The disorder is associated with a significant quality of life burden from a psychological, emotional, and social perspective. Studies on quality of life reveal that the negative effects of hyperhidrosis are comparable to those of conditions such as severe psoriasis, end-stage renal failure, rheumatoid arthritis, and multiple sclerosis.⁵

Hyperhidrosis is primary (idiopathic) or secondary to other diseases. It is generalized (involving the whole body) or focal (involving specific body sites, most commonly the axillae, palms, soles, and face).⁶ Hyperhidrosis can be further distinguished by anatomic distribution of affected regions and by laterality: unilateral versus bilateral and symmetric.⁷

Primary hyperhidrosis is idiopathic and focal.⁶ It affects about 2.8% of the U.S. population.⁸ It shows no sexual predilection and most commonly affects people between 25 and 64 years of age. Rarely, patients may be affected in early childhood.⁸ Japanese individuals are reportedly affected by

hyperhidrosis more than 20 times more frequently than other ethnic groups;⁹⁻¹¹ however, all races can be affected.

Genetic predisposition is seen in about 30% to 50% of people with an autosomal dominant mode of transmission, incomplete penetrance, and variable phenotype.¹¹ Only one primary focal hyperhidrosis locus was mapped to chromosome 14q11.2-q13, but no disease-causing gene has been identified.¹²

Secondary hyperhidrosis can be either generalized or focal and results from an underlying condition such as endocrine, neurologic, or infectious disorders.

Pathophysiology

Hyperhidrosis is observed in the areas with the highest density of eccrine and apoecrine sweat glands. Apocrine glands have not been shown to contribute to excessive sweat production.¹³ Axillary hyperhidrosis is the most common, followed by palmar and plantar hyperhidrosis.

In the localized form, hyperhidrosis is due to an abnormal regeneration of sympathetic nerves or a localized abnormality in the number or distribution of the eccrine glands. Essential hyperhidrosis, which is a disorder of the eccrine sweat glands, is usually associated with sympathetic overactivity.¹⁴

Generalized hyperhidrosis may be a result of autonomic dysregulation, or it may be a consequence of a systemic disease, febrile illness, and adverse effects of medications or malignancy. Hyperhidrosis beginning later in life requires investigations for endocrine disorders (diabetes mellitus, hyperthyroidism, and hyperpituitarism) or neurologic conditions (including peripheral nerve injury, Parkinson's disease, reflex sympathetic dystrophy, spinal injury, and Arnold-Chiari malformation). Asymmetric hyperhidrosis may also be a sign of neurologic disease.¹⁵ Additional causes include pheochromocytoma, carcinoid syndrome, respiratory disease, and psychiatric disease. Hyperhidrosis may accompany hot flashes during menopause. Medications associated with excessive sweating include propranolol, physostigmine, pilocarpine, tricyclic antidepressants, and serotonin reuptake inhibitors. It has been reported that the temperament and character profile of patients with essential hyperhidrosis¹⁶ is not related to social phobia or personality disorder.

Clinical presentation

Primary hyperhidrosis usually involves the hands, axillae, feet, and the craniofacial region. The diagnostic criteria include excessive sweating for at least 6 months with 4 or more of the following present:

- primary involvement of eccrine-dense (axillae/palms/soles/craniofacial) sites

Download English Version:

<https://daneshyari.com/en/article/3194042>

Download Persian Version:

<https://daneshyari.com/article/3194042>

[Daneshyari.com](https://daneshyari.com)