Original Research Article

Effects of medical drugs according to sweating localization in primary hyperhidrosis

ABSTRACT

Background: Primary hyperhidrosis is excessive sweating localized to different parts of the body, mostly on the hands. It is exact cause unknown, negatively affects the psychosocial structure of the person and a clinically important health problem.
Aims: In the study, it was aimed to examine the effects of drugs used on primary hyperhidrosis.
Study Design: The drugs used by the patients who applied to the thoracic surgery clinic with the complaint of sweating and their effects were analyzed retrospectively. Ersin Arslan Training and Research Hospital Thoracic Surgery Clinic between January 1, 2015, and September 30, 2021 (outcomes of seven years).
Methodology: A total of 120 patients (45 female, 75 male and age range 8-67) with sweating complaints were identified. Age, gender, sweating localization and drugs used were examined. Statistically, data were analyzed with 95% confidence interval (CI) and Chi Square test.
Results: A total of 120 patients were analyzed. 37.5% were female and 62.5% male. The mean age was 27.1 ±1.54 years. Patients were use 23.4% Aluminum hydrochloride cream), 20.8% Bornaprine hydrochloride, 20% Hyoscine-N-butylbromide. According to sweating localizations; 42.6% palmar only, 18.7% palmar and axilla, 18.7% palmar and craniofacial, 7.8% palmar and plantar, 5.9% diffuse, 4.5% cranial, 1.8% palmar and abdomen. Primary hyperhidrosis is more often between ages of 21-30 and in male. 14.1% complete response, 24.1% partial response to medical treatments, and 31.6% didn't respond to treatment. Antidepressant use and stress were associated with primary hyperhidrosis.
Conclusion: According to the localization of sweating; Aluminum hydrochloride reduces sweating on the palmar, Hyoscine-N-butylbromide axillary and palmar sweating. Bornaprine hydrochloride reduces sweating on all localizations except craniofacial and abdomen, and is associated with a complete response on palmar sweating. Bornaprine hydrochloride is more effective than the other two on primary hyperhidrosis.

Keywords: *drugs, hyperhidrosis, medical, sweating, treatment*

1.INTRODUCTION

Primary hyperhidrosis is excessive sweating localized to different parts of the body, mostly on the hands. This disease, the exact cause of which is unknown, negatively affects the psychosocial structure of the person. The incidence in and adolescents children under the age of 18 has been reported to be 1.6% [1]. Sweating is one of the body's temperature regulation mechanisms. Humans have eccrine, apocrine, and apoecrine sweat glands. Apocrine and apoeccrine glands are located in the axilla. Eccrine glands are localized in much parts of the body, especially in the palmar and plantar parts [2]. Although there is sweating on the axilla, the primary hyperhidrosis of cause is generally thought to be activation of the eccrine glands. This disease, which causes psychosocial and dermatological problems in humans, is an important health problem.

2. MATERİAL AND METHODS

Patients who applied to the thoracic surgery outpatient clinic with the complaint of sweating between January 1, 2015, and September 30, 2021were analyzed retrospectively. A total of 120 patients (45 female, 75 male and age range 8-67) with sweating complaints were identified. Age, gender, sweating localization and drugs used were examined. Statistically, data were analyzed with 95% confidence interval (CI) and Chi Square test.

3. RESULTS AND DISCUSSION

A total of 120 patients were analyzed. 37.5% were female and 62.5% male (95%CI ±0.08). The mean age was 27.1 years (± 1.54). It was determined that 6.7% of the patients hyperthyroidism, 12.5% of them antidepressant use and 29.2% increase with stress. According to sweating localizations; 42.6% palmar only, 18.7% palmar and axilla, 18.7% palmar and craniofacial, 7.8% palmar and plantar, 5.9% diffuse, 4.5% cranial, 1.8% palmar and abdomen. Patients were use 23.4% Aluminum hydrochloride cream (3-4 times a day), 20.8% Bornaprine hydrochloride (4 mg/day), 20% Hyoscine-N-butylbromide (2x10 mg/day), 5.8% antithyroid drug for sweating (Figure 1 and 2).

Figure 1. Distribution of age and gender

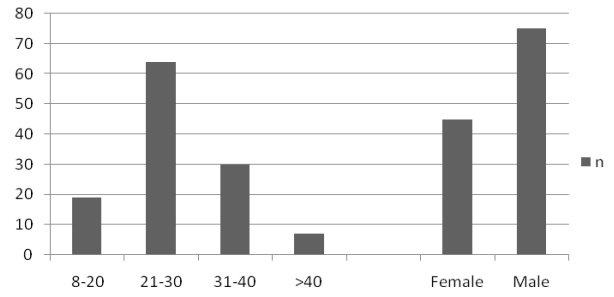
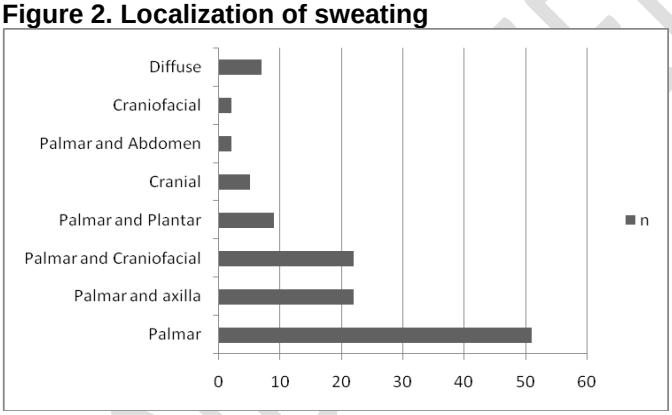


Figure 2. Localization of sweating



According to the study, primary hyperhidrosis is more common in men and between the ages of 21 and 30 (p<0.0001 ±0.09). Palmar sweating was more common on male (p<0.02) and palmar and craniofacial sweating on female (p<0.03). 14.1% complete response, 24.1% partial response to medical treatments, and 31.6% didn't respond to treatment (p<0.001). Localized sweating is most often on the palmar only. Partial response to treatment and no response, were associated with Aluminum hydrochloride, Hyoscine-N-butylbromide and Bornaprine hydrochloride (p<0.0002). Complete response was associated with Bornaprine hydrochloride (p<0.0004). Treatment of Aluminum hydrochloride was associated partial response to palmar sweating (p<0.004), and that no response to diffuse sweating and palmar and abdomen (p<0.0001). Hyoscine-N-butylbromide treatment partially responded to sweating of the palmar and axillae (p<0.04), but didn't respond to diffuse with palmar and abdomen (<0.0001). Bornaprine hydrochloride treatment was a partial response to sweats other than craniofacial, palmar and craniofacial, palmar and abdomen (p<0.0001). Antidepressant use and stress were associated with primary hyperhidrosis (p<0.05) (Table 1).

Table 1. Statistical analysis of drugs

Localization	No Response			Partial Response			Complete Response		
	p<	ODSS	D	p<	ODSS	D	p<	ODSS	D
Palmar	0.05	2.141		0.004	0.642	AH	0.0001	1.240	BH
Palmar and axilla	0.02	0.773		0.04	2.700	HNB			
Palmar and Craniofacial	0.02	0.773	BH	0.2					
Palmar and Plantar	0.0001	0.595		0.07	0.774	BH			
Cranial	0.1			0.0001	2.173	BH			
Palmar and Abdomen	0.0001	2.189	AH, HNB, BH	0.4					
Craniofacial	0.3		BH	0.4					
Diffuse	0.0001	0.856	AH, HNB	0.0001	2.510	BH			

*D:Drugs AH: Aluminum hydrochloride HNB: Hyoscine-N-butylbromide BH: Bornaprine hydrochloride
*Statistical analysis: Chi square test

Aluminum hydrochloride (AH) is among the most commonly used topical in the treatment of sweating [3]. Hyoscine-N-butylbromide (HNB) is an antiparasympathetic substance that blocks acetylcholine on smooth muscle and glands [4]. For this reason, it is preferred in the treatment of sweating in order to affect glands with parasympathetic innervation. Bornaprine hydrochloride (BH) is an anticholinergic substance that is also used in the treatment of neurological diseases. Drugs is preferred in the treatment of hyperhidrosis due to its inhibition of the innervation of the glands. In retrospective study, the effects of these drugs were examined. It was determined that there was no effect of all three drugs in the case of palmar and abdominal sweating together. Diffuse sweating is usually associated with hyperthyroidism and cause of secondary hyperhidrosis. Therefore, the effects of antithyroid drugs were not included in the study. However, although AH and HNB had no effect on diffuse sweating, it was found that BN partially decreased sweating. Although BN reduces sweating in localized cranial sweating, it has no effect on sweating with craniofacial components. It was found that AH reduced palmar sweating, HNB reduced axillary and palmar sweating. According to its localization, it was found that the complete response was with the effect of BH on palmar sweating. In patients who do not respond to medical treatments; thoracic sympathectomy is preferred surgically, especially in palmar hyperhidrosis.

4. CONCLUSİON

According to the localization of sweating; AH reduces sweating on the palmar, HNB axillary and palmar sweating. BH reduces sweating on all localizations except craniofacial and abdomen, and is associated with a complete response on palmar sweating. BH is more effective than the other two on primary hyperhidrosis.

ETHICAL APPROVAL

Republic of Turkey Ministry of Health 2021-09-18T23_48_37 numbered and Gaziantep University Medical Ethics Committee 2021/323 numbered approval have been received.

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