Concise report

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Postmenopausal craniofacial hyperhidrosis

K. Eustace[1] and N. J. Wilson[2]

[1]*Department of Dermatology, St Helens and Knowsley Teaching Hospitals NHS Trust, St Helens Hospital, St Helens, UK; and* [2]*Department of Dermatology, Royal Liverpool and Broadgreen University Hospitals NHS Trust, Broadgreen Hospital, Liverpool, UK*

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Summary

Hyperhidrosis is a condition marked by excessive sweating, which can either be localized or generalized. Primary focal hyperhidrosis (PFH) can arise from the palms, plantar feet, axillae and also from the face and scalp. PFH primarily affects a younger population of children and young adults, with the majority presenting before the age of 25 years. We report a distinct subtype of craniofacial hyperhidrosis in 20 postmenopausal women; this subtype is often under-recognized.

Hyperhidrosis is defined as a condition marked by excessive sweating, and occurs in up to 3% of the general population. Hyperhidrosis can be localized, or it can be generalized and affect many different sites. It is postulated that there is overactivation of the eccrine sweat glands by overstimulation of the sympathetic nervous system.[1] Primary focal hyperhidrosis (PFH) can arise from the palms, plantar feet or axillae, or from the face/scalp, which is termed craniofacial hyperhidrosis. PFH primarily affects a younger population of children and young adults, with the majority presenting before the age of 25 years.[2] We report a distinct subtype of craniofacial hyperhidrosis in 20 postmenopausal women; this subtype is a condition that is often under-recognized.

Report

Patients with postmenopausal craniofacial hyperhidrosis represent a unique cohort of patients with PFH. A previous case series of five patients was reported by Alsharqi *et al.* in 2012, but there is little other evidence in the literature reporting this distinct entity. We conducted a case series to identify women with the symptoms of craniofacial hyperhidrosis and to record their baseline demographics and treatment regimens.

Correspondence: Dr Karen Eustace, Department of Dermatology, St Helens and Knowsley Teachig Hospitals NHS Trust, St Helens Hospital, Marshalls Cross Road, St Helens, Merseyside, WA9 3DA, UK
E-mail: karen.eustace@sthk.nhs.uk

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The study was approved by our local quality improvement and clinical audit department and all patients provided written informed consent.

Retrospective data were obtained from the medical notes of patients attending a dedicated hyperhidrosis clinic and confirmed using telephone questionnaires. In total, 20 female patients with postmenopausal craniofacial hyperhidrosis were identified from the dermatology outpatient clinic database. Mean age of patients was 63.9 years (range 55–78 years), and mean age of menopause was 45.2 years (Table 1). The average length of time to develop symptoms postmenopause was 11.1 years (range 1–30 years). The majority of patients (75%) were on multiple regular medications (mean 6.1), but none of the patients believed their medications were related to the development of their symptoms. Of the 20 patients, 15 (75%) had received hormone replacement therapy, but there was no temporal association with the induction or improvement of symptoms. Six patients (30%) had a first-degree relative with symptoms of hyperhidrosis. All patients reported that the disease had a significant impact on their quality of life (QoL), with comments such as 'hair soaking wet', 'taking over my life', 'embarrassed to go out socially with friends', 'major impact on quality of life' and 'no quality of life'. Half (10/20) of the patients had undergone blood investigations; all had returned normal results except in one case (10%), which was a patient diagnosed with hypothyroidism, but treatment of this had not resulted in any improvement in the symptoms of craniofacial hyperhidrosis.

Four patients (20%) had tried topical therapies. Three of these had tried glycopyrrolate 2% in

cetomacrogol cream; two had noticed a partial response, while the other had experienced no clinical response. The fourth patient had tried topical aluminium chloride, also with no clinical response.

All 20 patients had tried oral anticholinergic agents. Five patients had tried propantheline prescribed by their general practitioner before referral to the hyperhidrosis clinic, with no improvement in their symptoms. One patient had tried clonidine, also prescribed in the community, with no improvement documented. Glycopyrrolate was administered in the Hyperhidrosis clinic to 19 patients, at initial doses of 1 mg once daily, which was then titrated up to a maximum dose of 8 mg daily, depending on patient response and tolerance of adverse effects (AEs). Oxybutinin (modified release) was given to four patients at doses of 10–30 mg daily. Overall, 18 (90%) of the 20 patients had a good improvement in their symptoms, while 6/20 (30%) had a complete response to anti-cholinergic therapy and 2/20 (10%) had no improvement. AEs were documented for 17/20 (85%); 14/17 (82%) experienced a dry mouth, resulting in 2 (15%) discontinuing treatment as a result, while 3/17 (18%) had nausea, with 2 of these patients discontinuing treatment due to this.

Eleven patients (55%) were given botulinum toxin type A (BTXA) injections (100 U in 4 mL of normal saline). Injections were 0.1 m, administered intradermally as spaced injections over the areas where the patient reported sweating, typically the hairline and nape of the neck. There were no associated muscular AEs observed. Of the 11 patients, 7 (64%) noticed a complete response in their symptoms and reported it as 'life-changing', and only 4 (36%) had no improvement. The mean duration of response lasted on average 5.33 months (2–9 months), and no AEs were reported. In two patients, the condition was resistant to all treatments (Table 2), and they subsequently underwent endoscopic thoracic sympathectomy (ETS) as a last-resort treatment. Both patients noted a marked improvement in their symptoms of craniofacial hyperhidrosis, but one patient experienced generalized compensatory hyperhidrosis.

The symptoms of PFH can be disabling and lead to impaired QoL. Braganca *et al.* reported their findings of anxiety and depression in 197 patients, and found that there was an increase in the rates of anxiety in this patient cohort compared with the general population. These rates of anxiety were seen to be higher in those with mild and moderate disease as opposed to those with severe disease.[3] These findings correlate with our study, as we found all patients felt that their symptoms impacted greatly on their QoL. They felt self-conscious and demonstrated symptoms of anxiety when faced with social situations.

Table 1 Patient demographics (n = 20).

Parameter	Result
Age, years, mean (range)	63.9 (55–78)
Mean age of menopause, years	45.2
Family history of hyperhidrosis	6 (30)
Smoking status	
Life long nonsmoker	3 (15)
Current smoker	6 (30)
Ex-smoker	11 (55)
Drinks alcohol	11 (55)

Table 2 Response to treatment (n = 20).

	Treated patients	Response		
		Complete	Partial	No
Topical treatment	4 (20)	0	0	0
Glycopyrrolate*	3 (75)	0	2 (66.6)	1 (33.3)
AC	1 (25)	0	0	1 (100)
Other treatments				
OAC	20 (100)	6 (30)	12 (60)	2 (10)
BTXA	11 (55)	7 (64%)	0	4 (36)
ETS	2 (10)	0	2 (100)	0

AC, aluminium chloride; BTXA, botulinum toxin type A; ETS, endoscopic thoracic sympathectomy; OAC, oral anticholinergic. *2% in cetomacrogol cream.

A systematic review published by Nicholas *et al.* reported the limited prevalence of high-quality studies looking at treatment options for primary craniofacial hyperhidrosis. They concluded by recommending topical glycopyrrolate as first-line treatment, as it was associated with a high efficacy rate of 96% and overall was well tolerated. In terms of anticholinergic therapy, they recommended oral oxybutynin because of its high efficacy rates of 80–100%, but associated with this, AEs were reported by 76–83.6% of patients. BTXA was also recommended because of its high success rate, with median response rates lasting 5–6 months,[4] which is comparable with the findings of our case series.

The cause of PFH is still unknown. Excess sweating and flushing is commonly seen in perimenopausal and menopausal women. This can be explained by an imbalance of the temperature-regulating system, resulting from an interplay of declining oestrogen levels, endorphins and 5-hydroxytryptamine (5-HT), and an increase in 5-HT receptors and subsequent

increase in norepinephrine, which initiates flushing.[5] However, this does not explain why postmenopausal craniofacial hyperhidrosis occurs in these women years after the menopause, and also does not explain why HRT does not improve their symptoms. The explanation of why this unique subtype of hyperhidrosis occurs is still up for debate.

In summary, we have identified 20 female patients with a distinct subtype of hyperhidrosis: postmenopausal craniofacial hyperhidrosis. This condition is not well recognized, and remains a challenge to treat despite the availability of multiple therapies. Effective treatment is paramount not only to manage the symptoms but also to improve patient QoL.

Learning points

- PFH is a condition associated with excess sweating arising from the palms, plantar feet, axillae and craniofacial zones.
- PFH affects QoL and is associated with symptoms of anxiety.
- Treatment options have variable outcomes.
- Postmenopausal craniofacial hyperhidrosis is a distinct subtype of PFH, which is often underrecognized.
- Anticholinergic therapy is effective in the majority of patients, and most can tolerate the AEs.
- BTXA can be considered as second-line therapy for patients who cannot tolerate or whose disease is refractory to topical therapy and/or anticholinergic treatment.

References

1 Alsharqi A, Wilson NJ. Craniofacial hyperhidrosis in post-menopausal women. *Australas J Dermatol* 2012; **53**: 158–9.
2 Hornberger J, Grimes K, Naumann M *et al.* Recognition, diagnosis, and treatment of primary focal hyperhidrosis. *J Am Acad Dermatol* 2004; **51**: 274–86.
3 Bragança GM, Lima SO, Pinto Neto AF *et al.* Evaluation of anxiety and depression prevalence in patients with primary severe hyperhidrosis. *An Bras Dermatol* 2014; **89**: 230–5.
4 Nicholas R, Quddus A, Baker DM. Treatment of primary craniofacial hyperhidrosis: a systematic review. *Am J Clin Dermatol* 2015; **16**: 361–70.
5 Sturdee DW, Hunter MS, Maki PM *et al.* The menopausal hot flush: a review. *Climacteric* 2017; **20**: 296–305.

