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Original article

Prevalence and factors associated with telogen effluvium in adult females at Makkah region, Saudi Arabia: A retrospective study

M.I. Fatani [a,*], A.M. Bin mahfoz [b], A.H. Mahdi [b], K.A. Alafif [a], W.A. Hussain [a], A.S. Khan [a], A.A. Banjar [a]

[a] *Hera General Hospital, Makkah, Saudi Arabia*
[b] *Umm AlQura University, Makkah, Saudi Arabia*

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Abstract

Background: Data on the epidemiology of telogen effluvium (TE) are limited, and its true incidence is largely unknown. Our aim is to calculate the prevalence of TE and evaluate its comorbidities and its relation to iron-deficiency anemia.

Methods: We performed a retrospective review of 279 medical records of the patients with TE seen at Hera Hospital, Makkah, Saudi Arabia, between 2011 and 2013.

Results: Of 279 female patients (mean age: 29.82 years), 58.5% of the patients were between the age of 21 and 40. Hypothyroidism was reported in 21.1% of the patients, dermatitis in 11.8%, diabetes mellitus in 5.7%, and bronchial asthma in 3.6%. Low hemoglobin was observed in 94.9% of the patients, low MCH in 99.6%, and low hematocrit in 90.21%. Serum ferritin was at $\leqslant$30 ng/mL in 64% of the patients and $\leqslant$70 ng/mL in 89.1%. The systemic treatment included the following: iron supplementation in 58.8%, folic acid in 51.3%, and zinc in 25.1%. Topical treatments included steroid in 63.1%, minoxidil in 34.8%, hair tonic in 68.8%, and antidandruff in 19.4%.

Conclusions: All patients were females, with most of their ages of onset between 21 and 40. It was commonly associated with iron-deficiency anemia and hypothyroidism.

Keywords: Telogen effluvium; Iron deficiency anemia; Makkah; Serum ferritin

1. Introduction

Telogen effluvium (TE) is a form of non-scarring alopecia characterized by diffuse hair shedding, often with an acute onset. A chronic form with a more insidious onset and a longer duration also exists (Sinclair, 2005; Whiting, 1996). It is an abnormality in the hair cycle (Harrison and Sinclair, 2002), occurring as a reaction pattern to various physical or mental stressors (Bernstein et al., 1988). The degree of effluvium depends on the severity and duration of exposure rather than the type of agent (Tosti et al., 1994).

Data on the epidemiology of TE are limited, and its true incidence or prevalence is largely unknown (Harrison and

* Corresponding author. Address: Hera General Hospital, PO Box 5970, Postcode 21955 Makkah, Saudi Arabia. Tel.: +966 555517839.
E-mail addresses: m_fatani@yahoo.com (M.I. Fatani), ah-binmah-foz@hotmail.com (A.M. Bin mahfoz), ahmado_mahdi@hotmail.com (A.H. Mahdi), Kh_alafif5@hotmail.com (K.A. Alafif), hussainwaleed@hotmail.com (W.A. Hussain), Khan_87_md@hotmail.com (A.S. Khan), Abanjar_banjar@hotmail.com (A.A. Banjar).
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Sinclair, 2002; Sinclair et al., 1999). The disorder is one of the most common forms of non-scarring hair loss, which patients present for clinical evaluation (Hordinsky, 2006). TE does not appear to have a predilection for particular racial or ethnic groups.

TE can be acute (lasting for less than six months), chronic (six months or more), or chronic-repetitive (Bergfeld and Mulinari-Brenner, 2001; McMichael et al., 2008). If a trigger is acute and short-lived, the TE will likely be acute and will be resolved. If the trigger is ongoing, repeated, sequentially occurring, or not reversed, then the telogen hair shedding can be ongoing (McMichael et al., 2008). For reasons that are unclear, chronic telogen effluvium (CTE) seems to affect only women (Whiting, 1996).

The aim of this study was to calculate the prevalence of TE and evaluate its comorbidities and its relation to iron-deficiency anemia. There is little reported data about this topic in Saudi Arabia.

2. Materials and methods

This study was conducted at the outpatient Department of Dermatology, Hera General Hospital, Makkah, Saudi Arabia. We retrospectively reviewed 279 cases from records of the patients seen at the clinic during 2011–2013. For the diagnosis of telogen hair loss, all patients were evaluated by a dermatologist through history and physical examination. The following data were collected: age, gender, duration, possible associated medical condition, family history, and data related to menstrual cycle. Examination of the hair included scalp examination and a hair-pull test. The following laboratory investigations were recorded: complete blood counts, serum ferritin, free T3, free T4, and thyroid-stimulating hormone. Systemic treatment included iron supplement, folic acid, zinc capsule, priorin capsule, and finasteride. The topical treatment included corticosteroid, minoxidil (2% and 5%), hair tonic solution and ampoule, anti-hair fall shampoo, and antidandruff shampoo.

In this study, we used the Statistical Package for the Social Sciences software, version 20, for data entry and analysis. Continuous data are presented as means. Categorical variables are presented as frequencies and percentages. This study was designed around ethical considerations of justice, autonomy, and beneficence. The research proposal was approved by the Research Ethics Committee of the Hera General Hospital in Makkah, Saudi Arabia.

3. Results

In all, 16,014 new female patients were seen in the Dermatology Department of Hera General Hospital, Makkah, Saudi Arabia, from January 2011 to December 2013. Among those patients, 279 had TE; thus, its incidence was 1.74%. All the patients were females. Their ages ranged from 10 to 62 years, with a mean age of 29.82 ± 11.34 years, and median is 27 years. The majority (58.5%) of the patients noticed the onset of TE between the age of 21 and 40, and 20.8% had acute TE, and 79.2% had chronic TE (see Table 1).

Only 10.4% of the patients reported that other family members have had TE, and 6.8% related it to their menstrual cycle.

For scalp examination, we found that only 1.1% showed erythema, 17% showed seborrheic scalp, and 81.9% showed no changes. A hair-pull test was found to be positive in 61.0% of the patients and negative in 39%.

Associated autoimmune/endocrine disorders were present in the majority of the patients. Of these, hypothyroidism was the most common, reported to be in 21.1% of the patients. Diabetes mellitus was reported in 5.7% of the patients, systemic lupus erythematosus in 2.2%, and rheumatoid arthritis in 2.2%. Associated cutaneous diseases noted in this study were dermatitis in 11.8% of the patients, psoriasis in 0.4%, and urticaria in 0.4%. Other comorbidities included hypertension in 2.5% of the patients, bronchial asthma in 3.6%, osteoarthritis in 3.9%, chronic hepatitis B infection in 2.9%, gastritis in 2.2%, migraine in 2.9%, and epilepsy in 1.4%. Among all records, only 14 files documented drugs related to TE, which are as follows: retinoids in 50% of the patients, anticoagulants in 35.7%, and carbamazepine in 14.3%.

In this study, we found that 94.9% of the patients showed hemoglobin (g/dL) less than the lower normal range in our laboratory reference (13.5–17.5), 99.6% showed MCH (%) less than the lower normal range (27–33), 31% showed MCV (fL) less than the lower normal range (80–101), 90.2% showed hematocrit (%) less than the lower normal range (40–50), and 48.3% showed RDW (%)

Table 1
Age at onset in relation with the duration of TE.

Age-group (in years)	Duration of hair fall		Total (%)
	Acute <6 months	Chronic >6 months	
10–20	13	44	57 (20.4%)
21–30	27	75	102 (36.6%)
31–40	11	50	61 (21.9%)
41–50	6	33	39 (14%)
51–60	1	18	19 (6.8%)
61–70	0	1	1 (0.36%)
Total	58 (20.8%)	221 (79.2%)	279 (100%)