MEASURING THE EPILATION FORCE OVER THE FRONTAL AND OCCIPITAL REGION IN CASES OF FEMALE PATTERN HAIR LOSS USING HAND HELD TRICHOTILOMETER

INTRODUCTION

The Female Pattern Hair Loss is defined as progressive thinning of hair which is usually non-scarring. There is usually gradual decrease in the ratio of terminal hair and vellus hair, which is termed as Folliculminiaturization. It is hair thinning occurring predominantly over the frontal and vertex region of the head, however it can involve any region of the scalp and sometimes it can present as diffuse hair thinning. Female pattern hair loss may begin as early as puberty. This pattern of hair loss has greater psychological impact on affected patients. Alopecia affecting a woman's emotional health status, has a great psychological impact as it causes distress to the patient, also increases the concern regarding one’s appearance and continuity of hair loss. Based on the levels of androgens, FPHL was earlier classified into Androgen dependent FPHL and Androgen independent FPHL. Trichotillometer was first designed and constructed by C L Krumdieck in the year 1981. It is a hand held device, which helps in measuring the force, necessary to epilate the individual hair. It can be used in an outpatient basis, to determine the force required to pluck the individual hair, in patients with alopecia.

AIM OF THE STUDY

To determine the epilation force (EF) required to pluck the anagen hair and telogen hair from frontal and occipital region of the scalp in female pattern hair loss.

REVIEW OF LITERATURE

Studies were conducted using the trichotillometer, to evaluate the nourishment status in adults.\textsuperscript{1,2} Chase et al., conducted a study on 17 adults patients who had features of protein energy
malnutrition. The aim of their study was to assess the force required to pluck the hair amongst the study population and it was compared with healthy individuals. The plucking force had significant correlation with that of serum albumin, hair shaft diameter, triceps skin fold, arm muscle circumference, weight, hematocrit and beta carotene

**STUDY DESIGN:** Hospital based Observational study

**RESEARCH SUBJECTS**

The study will be carried out on patients attending the outpatient department of dermatology venerology and leprology, PSGIMSR, Coimbatore.

**SAMPLE SIZE:** 30

**INCLUSION CRITERIA:**

1. Age more than 20 years
2. Patients diagnosed to have female pattern hair loss clinically using LUDWIG’s classification (only class 2)
3. Only female patients were included in the study

**EXCLUSION CRITERIA:**

Hair wash done within last three days at the time of OPD visit.

Currently on treatment for the hair loss.

**METHODOLOGY**

- Informed and written consent will be obtained from all patients.
- The volunteers will be made to sit on the stool.
- The clip at the lower end of the trichotillometer will be attached to the distal end of a single hair shaft.
- Spring balance is pulled upwards gently by hand at the top end with the help of the ring attached to its top till the hair snaps from the scalp.
• Force indicator slides down the inner wall of the spring balance and stops at the point when the hair is detached from the scalp.
• The force in gm will be noted and taken as the epilation force.

STATISTICAL ANALYSIS All the data obtained from these parameters will be recorded in excel sheets and statistical analysis will be done.

RESULTS

The mean force required to pluck anagen and telogen hair over frontal region was 0.51N and 0.71N respectively, which was not statistically significant (p value – 0.152). Similarly, the mean force required to pluck anagen and telogen hair over occipital region was 0.61N and 0.51N respectively, however the results did not reach its statistical significance.

Conclusion:

We conclude that, Trichotillometer is a simple, portable and easy to use device which can be used in the OPD for the diagnosis of pattern hair loss.

We can also compare the epilation force of anagen hair, before and after the treatment in diseased patients with the help of this equipment to find the effectiveness of the given hair loss treatment.

References


KEY WORDS:
Female pattern hair loss, Epilation force, androgenetic alopecia