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ORIGINAL RESEARCH

ASSESSMENT OF CASES OF ALOPECIA AREATA

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ABSTRACT

Background: To assess cases of Alopecia Areata with dermascope.

Methods: Ninety- six (96) cases of Alopecia Areata age ranging 20-50 years of either gender were selected. The site was selected and the lesion was observed through the dermascope. Grading was performed and hair loss was recorded.

Results: Out of 96 patients, males comprised 40 (41.6%) and females 56 (58.4%). Dermascopic findings were vallus hair in 33 (34.3%), yellow dots in 21 (21.8%), black dots in 10 (10.4%), broken hair in 18 (18.7%) and exclamation mark in 14 (14.5%) patients. A non- significant difference was observed (P> 0.05). Hair loss grade S1 was seen in 9 (9.3%), S2 in 13 (13.5%), S3 in 15 (15.6%), S4 in 23 (23.9%) and S5 in 36 (37.5%) patients. A significant difference was observed (P< 0.05).

Conclusion: The most common dermascopic findings were vallus hair and yellow dots. In maximum patients, S5 hair loss grade was observed.

Keywords: Alopecia areata, Dermascope, yellow dots

INTRODUCTION

Alopecia areata (AA) is an autoimmune condition that attacks the hair follicles, causing nonscarring hair loss.[1] The median age at diagnosis is 33. Male patients may be more likely to be diagnosed in childhood, while females are more likely to present in adolescence and have greater concomitant nail involvement or concomitant autoimmune diseases.[2] In AA, CD4+ and CD8+ T-cells violate the immune privilege of the anagen hair follicle, leading to loss of the growing hair shaft.[3] CD8+ T-cells are present in significantly greater quantities than CD4+ cells, and a subset of them known as CD8+ NKG2D+ T-cells has been found both necessary and sufficient to induce AA in C3H/HeJ mice.[3] A predominant Th1 cytokine profile has been discovered at the site of AA lesions.[4,5]

There are three basic types of AA: alopecia totalis (affecting the entire scalp), alopecia universalis (affecting every surface region of the body), and patchy AA (limited areas of hairlessness).[6] Additional kinds of AA include diffuse form, sisaipho (central hair loss sparing the marginal hair line), and ophiasis (band-like alopecia on the occipital and temporal scalp). Alopecia totalis, universalis, and ophiasis are considered severe conditions. AA severity is classified as mild (≤3 patches), moderate (≥3 patches without alopecia totalis or universalis), and severe.[7] Dermoscopy is a non-invasive diagnostic procedure used increasingly in dermatological practice not only for the evaluation of pigmented skin lesions but also for hair disorders.[8,9] Considering this, the present study evaluated cases of Alopecia Areata (AA) with the help of dermascope.

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MATERIALS & METHOD

This observational prospective study consisted of ninety- six cases of Alopecia Areata (AA) of age ranging 20-50 years of either gender. Institutional approval for the conduction of the study was obtained. A written informed consent was taken from all enrolled patients before starting the study. In all patients, demographic profile such as name, age, gender etc. was recorded in case history proforma. A thorough general physical examination, systemic examination and mucocutaneous examination was performed. The site was selected and the lesion was observed through the dermascope. Grading was performed and hair loss was recorded in all patients. Results thus obtained were entered in MS excel sheet for statistical analysis. SPSS version 21.0 was used for the analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 96		
Gender	**Male**	**Female**
Number (%)	40 (41.6%)	56 (58.4%)

Out of 96 patients, males comprised 40 (41.6%) and females 56 (58.4%) (Table I).

Table II Assessment of dermascopic findings

Dermascopic findings	Number (%)	P value
Vallus hair	33 (34.3%)	0.45
Yellow dots	21 (21.8%)	
Black dots	10 (10.4%)	
Broken hair	18 (18.7%)	
Exclamation mark	14 (14.5%)	

Dermascopic findings were vallus hair in 33 (34.3%), yellow dots in 21 (21.8%), black dots in 10 (10.4%), broken hair in 18 (18.7%) and exclamation mark in 14 (14.5%) patients. A non-significant difference was observed (P> 0.05) (Table II, graph I).

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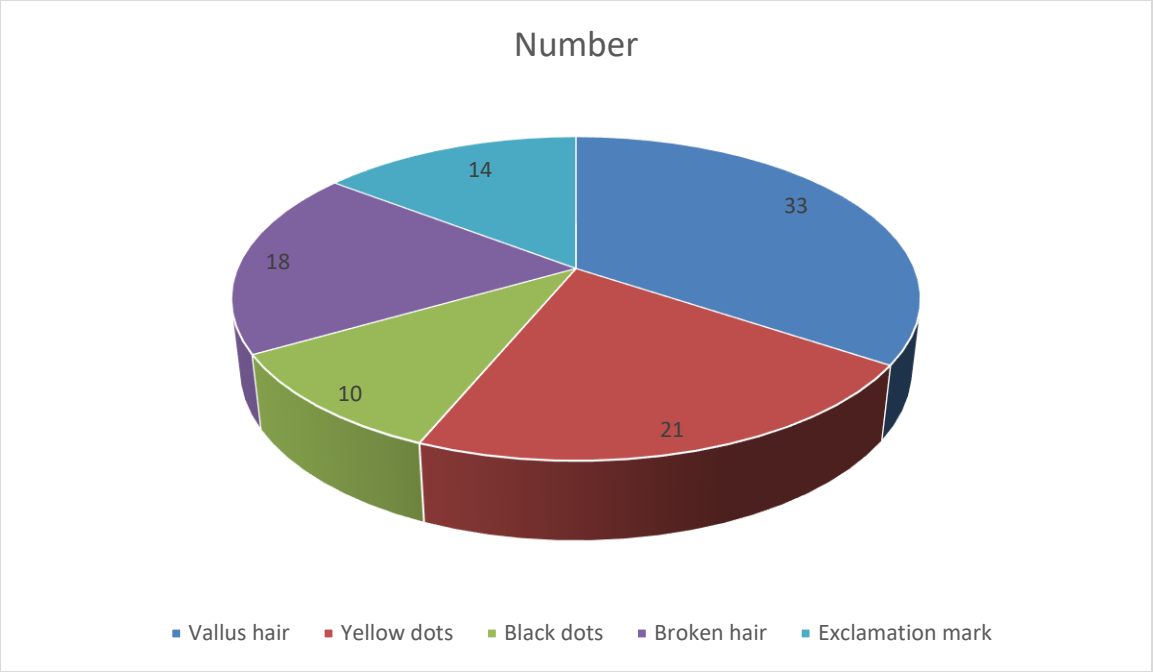

Graph I Assessment of dermascopic findings

Table III Grading of hair loss

Grading	Number (%)	P value
S1	9 (9.3%)	0.05
S2	13 (13.5%)	
S3	15 (15.6%)	
S4	23 (23.9%)	
S5	36 (37.5%)	

Hair loss grade S1 was seen in 9 (9.3%), S2 in 13 (13.5%), S3 in 15 (15.6%), S4 in 23 (23.9%) and S5 in 36 (37.5%) patients. A significant difference was observed (P< 0.05) (Table III, graph II).

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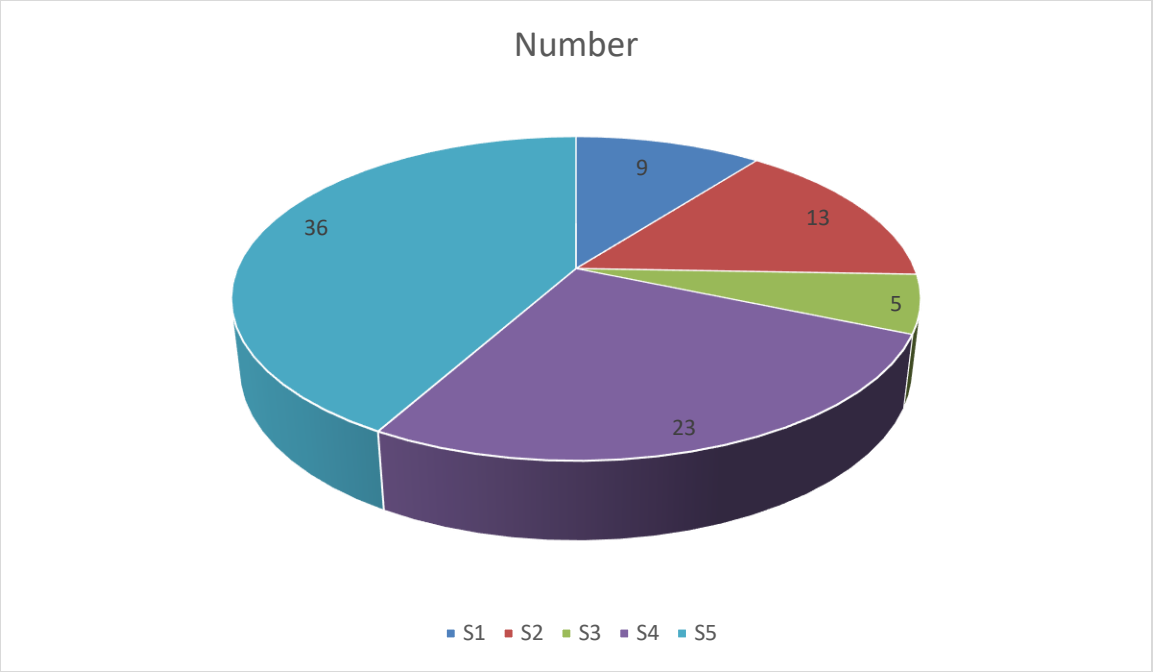

Graph II Grading of hair loss

DISCUSSION

Alopecia areata (AA) is a nonscarring alopecia caused by T-cell-mediated autoimmune destruction of hair follicles.[10,11] The disease's precise pathogenesis is unknown. Evidence, however, points to an autoimmune response to the hair follicles brought on by a combination of environmental and hereditary variables in AA.[12,13] Studies using observational data reveal a strong (10%–42%) association between AA and family history. Single-nucleotide polymorphisms (SNPs) linked to AA have been found in large numbers through genome-wide association studies. Environmental variables most likely cause or worsen AA. Although AA is frequently linked to stress, there is conflicting evidence in human study literature.[14,15] There are several hypotheses regarding AA pathogenesis. It has been suggested that viral and bacterial infection, endocrine, autoimmune, psychological, and genetic factors may play a role in AA pathogenesis.[16,17] Considering this, the present study evaluated cases of Alopecia Areata (AA) with the help of dermascope.

In this study, it was found that out of 96 patients, males comprised 40 (41.6%) and females 56 (58.4%). Tosti et al[18] found that 128 patients had mild to severe AA, while 63 patients had severe AA. Out of 191 patients, 55 had concurrent autoimmune disease or an associated inflammatory condition. Currently, 66 out of 191 patients were disease-free. These comprised 41 out of 60 patients (68.3%) with S1 disease; 22 out of 68 patients (32.3%) with S2 disease; 1 out of 11 patients (9%), 1 out of 14 patients (7.1%) with S4 disease; and 1 out of 11 patients (9.5%) with alopecia totalis (AT). Currently, 69 out of 191 patients (36–1%) had alopecia universalis or AT. Severe patterns of AA exhibited a statistically significant tendency to deteriorate with time. 18 out of 39 children (13 with ≤S2 disease and 5 with ≥S3 disease) with AA had developed AT or alopecia universalis at long-term follow-up.

Our results showed that dermascopic findings were vallus hair in 33 (34.3%), yellow dots in 21 (21.8%), black dots in 10 (10.4%), broken hair in 18 (18.7%) and exclamation mark in 14 (14.5%) patients. A non- significant difference was observed (P> 0.05). Hair loss grade S1 was seen in 9 (9.3%), S2 in 13 (13.5%), S3 in 15 (15.6%), S4 in 23 (23.9%) and S5 in 36 (37.5%) patients. Fricke

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et al[19] found that the lifetime incidence of AA is about 2% universally. Both formal population studies found no sex predominance. First onset is most common in the third and fourth decades of life but may occur at any age. An earlier age of first onset corresponds with an increased lifetime risk of extensive disease. Global DALYs for AA were calculated at 1,332,800 in 2010. AA patients are at risk for depression and anxiety, atopy, vitiligo, thyroid disease, and other autoimmune conditions. AA is the most prevalent autoimmune disorder and the second most prevalent hair loss disorder after androgenetic alopecia, and the lifetime risk in the global population is approximately 2%. AA is associated with psychiatric and medical comorbidities including depression, anxiety, and several autoimmune disorders, and an increased global burden of disease.

Bapu et al[20] found that the most common dermoscopic findings were yellow dots (84.1%), vellus hairs (62.6%), black dots (48.4%), exclamation mark (30.9%), and broken hair (9.5%), in decreasing order. The most common dermoscopic findings in patients on diphencyprone were vellus hairs and yellow dots. Vellus hairs were more common in patients with remitting disease pattern. Yellow dots and vellus hairs were most common in patients with alopecia universalis. However, broken hairs and exclamation mark hairs were mostly observed in patchy multiple AA patients. Yellow dots and exclamation mark hairs were also significantly more common in patients with positive pull test. Concerning scalp severity, yellow dots related positively, while vellus hairs, broken hairs, and exclamation mark hairs related negatively with severity of disease.

Garcia-Hernandez et al[21] in 216 patients with AA, the overall prevalence of AA was approximately 2.3%. The mean disease duration at the time of presentation was 2 months while the mean age of onset was 25.61 years. The most common type of AA in both adult and pediatric groups was the patchy type involving the scalp. Comorbid diseases were found in 32.41% of patients. Common associated conditions included hypothyroidism, diabetes mellitus, and atopic diseases. The overall prevalence of AA among a population of Saudi patients is 2.3%. AA prevalence is higher in pediatrics than adults. Common comorbid conditions include hypothyroidism, diabetes mellitus, and atopic diseases.

CONCLUSION

Results of the study showed that most common dermascopic findings were vallus hair and yellow dots. In maximum patients, S5 hair loss grade was observed.

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