IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 5 Ver. IX (May. 2016), PP 103-108
www.iosrjournals.org

"Evaluation of Depression and Anxiety in Trichodynia patients of Androgenic Alopecia and Alopecia Areata"

Atishay Bukharia[1], Nidhi Jain[2]
[1]*MD, Dermatology Resident, Rajendra Institute of Medical Sciences, Ranchi, India.*
[2]*DPM, Psychiatry Senior Resident, Central Institute of Psychiatry, Kanke , Ranchi, India.*

Abstract
Introduction*: Trichodynia refers to pain, discomfort or paresthesia of the scalp. It is a very common, relatively new and usually under diagnosed entity. It is frequently related with diseases of hair loss like Telogen Effluvium, Alopecia Areata and Androgenic Alopecia.*
Methodology: *300 subjects were recruited after taking written informed consent for study, including 100 cases of Androgenic Alopecia, Alopecia Areata and control each. First each group was analyzed for the presence of Trichodynia, then the patients with Trichodynia were evaluated for anxiety and depression by applying Hamilton Rating Scale for Anxiety (HAM-A) and Hamilton Rating Scale for Depression (HAM-D).*
Results: *Trichodynia was found in significantly higher in patients of Androgenic Alopecia and Alopecia Areata when compared with control. Anxiety was significantly higher in patients with Alopecia Areata with Trichodynia, when compared with Alopecia Areata without Trichodynia, while no statistically significant difference was found in terms of depression.*
Conclusion: *Trichodynia is a common problem in patients of Androgenic Alopecia and Alopecia Areata and anxiety is frequently* associated with Trichodynia.

I. Introduction

Unpleasant sensation like pain, paresthesia, burning, stinging and scalp discomfort associated with hair loss is known as Trichodynia.[1] Term Trichodynia was coined by C.Del forno in 1995.[1] It is also known as "hair pain" or "Burning scalp syndrome".[3] These sensation can affect either whole scalp or can be present in specific spots.[2] Burning symptom is most severe and it is not uncommon to suffer from insomnia or abnormal behavior due to this symptom.[2]

The exact pathogenesis is not known however the role of substance P, inflammation , anxiety and depression has been proposed.[2,4,5] Delfrin and Lurie [6] drew attention to the role of Peripheral and central sensitization in the etiology of Trichodynia. Trichodynia can be spontaneous or it can be induced by simple activities like massaging, combing, washing and even by hat wearing.[6] Trichodynia is common in females as compared to males and various reasons has been cited for this association including increased distress and long size of hairs.[2]

Trichodynia seems to be more related to hair loss, in fact Baldari et al.[17] found Trichodynia in 33% of the patients with hair loss, Grimalt et al.[19] in 14.3% of 578 patients with Androgenic Alopecia (AGA), Telogen Effluvium, or Alopecia Areata. Trichodynia is a recently discovered entity with very few studies, despite of being non life threatening it can be a cause of serious stress in patients suffering from it so there is need to explore all aspects of Trichodynia for better understanding of its pathogenesis and management options.

Androgenic Alopecia is the most common cause of hair loss in both males and females and is progressive in nature.[7] It has always been a cause of significant psychosocial morbidity.[8,9] Alopecia Areata is also one of the most common cause of hair loss and accounts for 25% of all alopecia causes.[10] The prevalence in general population was estimated to be 0.1-0.2% with a lifetime risk of 1.7%.[11] Various studies has also associated it with anxiety, depression and other psychiatric disorder.[22,23]

II. Material And Methods

This study was conducted at out-patients Dermatology department of tertiary health centre. It was a cross sectional, hospital based study. Total sample size was 300 which include, 100 cases of Androgenic Alopecia, 100 cases of Alopecia Areata and 100 healthy control without hair loss. Patients of 15 to 45 years of age of both sex were selected for study. Patients below 15 and above 45 years of age, known cases mental disorders or substance dependence excluding tobacco and caffeine and any other disorder of scalp were excluded from study.

Androgenic Alopecia and Alopecia Areata cases were diagnosed by a dermatologist. The diagnosis of Trichodynia was made on basis of clinical presentation as well as trichological examination. Patients were questioned about the presence of altered sensation, pain, stinging, burning, tenderness, hair discomfort, crawling

and uncomfortable awareness of scalp. Pruritus was not considered as a symptom of Trichodynia. Few patients had spontaneously reported their symptoms while in others it was specifically asked.

After obtaining research ethics committee approval, Androgenic Alopecia, Alopecia Areata and healthy control, who were willing to give written informed consent were recruited for study. Samples were collected by purposive sampling. The patients with Trichodynia were evaluated for anxiety and depression by applying Hamilton Rating Scale for Anxiety (HAM-A)[12] and Hamilton Rating Scale for Depression (HAM-D)[13] by one of the author, who is a psychiatrist.

The HAM-A probe 14 parameters (items) and takes 15-20 minutes to complete the interview and score the results. Each parameter (item) defined by a series of symptoms and measures both psychic anxiety and somatic anxiety. Each item is rated on 5-point scale 0-4. Total score: 0-56, Normal is <17 and score ≥18 is considered as cases of anxiety.[12] The HAM-D form lists 21 items, the scoring is based on the first 17 items. Ten items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Eleven items are scored from 0-2. Total score ranges from 0-62; scores of less than 7 considered normal; and scores of ≥8 is considered as cases of depression. It generally takes 15-20 minutes to complete the interview and score the results. It is the most commonly used measure of depression.[13]

Data was analyzed using statistical packages for social sciences (SPSS Version 22). Fisher's exact and chi-square tests were used for statistical analysis.

III. Results

The data gathered were consolidated, code and subjected to appropriate statistical analysis. The demographic profile of Androgenic Alopecia patients was: 62% patients were of 15 to 30 years while 38% were of 31 to 50 years; 62% were males; majority were educated more than 12th standard (61%); Hindu (65%) and of lower socioeconomic status (40%). This profile was statistically similar to control group (Table 1). Among Alopecia Areata patients 54% were of 15 to 30 years and 46% were of 31 to 50 years of age; 52 % patients were female; majority were educated more than 12th standard(63%); Hindu (66%) and of lower socioeconomic status (45%). Controls were statistically similar to Alopecia Areata group in demographic profile (Table 2). There was no statistically significant difference among Androgenic Alopecia and Alopecia Areata groups in terms of socio-demographic profile. (Table 3)

Trichodynia was found in 13% patient of Androgenic Alopecia, 19% of Alopecia Areata and 5% among controls. Among Androgenic Alopecia group, Trichodynia was found significantly higher in comparison to control (p=0.04). Similarly in Alopecia Areata group Trichodynia was found significantly more in comparison to control (p=0.00). While comparing the Androgenic Alopecia with Alopecia Areata group, no statistically significant difference was found.(Table:1,2,3)

Those 13 patients of Androgenic Alopecia having Trichodynia were compared with 13 patients of Androgenic Alopecia without Trichodynia and we found that on applying HAM-A scale, 7 patients of Androgenic Alopecia with Trichodynia and 3 cases of Androgenic Alopecia without Trichodynia were having anxiety and this difference was statistically not significant(p=0.1). Similarly after applying HAM-D scale, 3 patients of Androgenic Alopecia with Trichodynia and 2 cases of Androgenic Alopecia without Trichodynia were having depression and this difference was not statistically significant (p=0.61). (Table: 4)

Those 19 patients of Alopecia Areata having Trichodynia were compared with 19 patients of Alopecia Areata without Trichodynia and it is found that on applying HAM-A scale, 10 patients of Alopecia Areata with Trichodynia and 4 cases of Alopecia Areata without Trichodynia were having anxiety and this difference was statistically significant(p=0.04). Similarly after applying HAM-D scale, 6 patients of Alopecia Areata with Trichodynia and 3 cases of Telogen effluvium without Trichodynia were having depression and this difference was not statistically significant(p=0.25). (Table: 5)

IV. Discussion

Trichodynia is a relatively new entity but it is a very common problem with hair loss. Since hair loss is one of the most common dermatological disorder, it is important to study various aspects of Trichodynia. Trichodynia is frequently associated with hair loss disorders like Androgenic Alopecia and Alopecia Areata.[2] The author observed the relation between intensity of Trichodynia and hair fall with higher symptomatic persons reporting more hair fall. Williman and Trüeb[3] have also observed that the intensity of Trichodynia symptoms is correlated with severity of shedding but Delfrin and Lurie[6] have not observed any such association.

In current study mean age of patients of Androgenic Alopecia with Telogen Effluvium was 27.92 years and mean age of Alopecia Areata with Trichodynia was 34.74 years. In Rebora et al[1] study mean age of hair loss patients with Trichodynia was 37.3 years while in Williman and Trüeb[3] study it was 46 ± 15 years. We found female predominance in Trichodynia patients with 7 (53.84%) and 13 (68.4%) females in Androgenic Alopecia and Alopecia Areata group respectively. In Kivanc-Altunay et al.[14] study out of 38 patients of Trichodynia 23 patients were females. Williman and Trüeb[3] also found women predominance with 20% of

women affected in comparison to 9% men in total of 403 hair fall patients. There are numerous probable reasons of women predominance, they usually have long hairs which add weight to the shaft hence the hair is more likely to be painful.[2] Gender related difference in pain perception could also be the cause behind higher prevalence of Trichodynia in females.[3,15] It may cause more distress in women and they are more likely to get reported.[16]

In current study Trichodynia was present in 13% of the patients with Androgenic Alopecia. Trichodynia was found significantly higher in comparison to control. It is in concordance with Kivanc-Altunay et al.[14] study, where Trichodynia was present in 23% % of Androgenic Alopecia patients and prevalence of Trichodynia was significantly higher than in control group. Baldari et al.[17] reported Trichodynia in 8.3% of patients of Androgenic Alopecia and 45% of patients of Androgenic Alopecia with Telogen effluvium. Durusoy et al.[18] reported 26.4% prevalence of Trichodynia in patients of Androgenic Alopecia.

We found that 19% of total Alopecia Areata patients have Trichodynia. Rebora[1] found Trichodynia in 34.2 % of patients with hair loss, Baldari et al[17] found it in 33% of patients with hair loss. Since both Rebora[1] and Baldari et al[17] have taken all hair loss patients that might be the reason behind higher prevalence of Trichodynia in their studies. Author did not found any other study of Trichodynia prevalence in Alopecia Areata although Trichodynia is the well reported symptom of Alopecia Areata[2,19] and is mainly attributed to inflammatory pathogenesis of Alopecia Areata.[20]. On comparing the Androgenic Alopecia with Alopecia Areata, statistically significant difference was not found in Trichodynia prevalence ($p=0.25$). Author did not found any other study comparing the Trichodynia prevalence in Androgenic Alopecia versus Alopecia Areata.

While comparing the Patients of Androgenic Alopecia with Trichodynia, with those of Androgenic Alopecia without Trichodynia, no significant difference was found in terms of anxiety or depression. In current study Anxiety and depression was present in 10 out of 13 patients (77%) of Androgenic Alopecia with Trichodynia. Similar to our findings Kivanc-Altunay et al.[14] also found psychiatric disorders including depression, anxiety and obsessive compulsive personality disorder in 75% patients of Androgenic Alopecia with Trichodynia.

In similar way on comparing the patients of Alopecia Areata with Trichodynia and those of Alopecia Areata without Trichodynia, significant difference was found in terms of anxiety with higher prevalence in patients of Alopecia Areata with Trichodynia. Its very usual to have a negative impact on psychological status because of hair abnormalities like Alopecia Areata especially in women and young adults.[21]

In current study anxiety was present in 10 out of 19 patients (52.6%) and depression in 6 out of 19 (31.6%) patients of Alopecia Areata with Trichodynia. Colón et al[22] found the 39 % prevalence of generalized anxiety disorders in patients suffering from Alopecia Areata and even reported increased anxiety disorders in their first degree relative. Koo et al[23] also reported increase prevalence of anxiety disorders in Alopecia Areata patients when compared with normal population. Brajac et al[24] reported anxiety as a risk factor for Alopecia Areata, and found higher degree of trait anxiety in Alopecia Areata when compared with healthy control group. Recently Alfani et al also confirmed these finding of anxiety predominance in Alopecia Areata when compared with normal control.[26]

Williman and Trüeb reported increase in anxiety due to Trichodynia as many patients believe that Trichodynia can aggravate their hairloss [3]. So it is not clear whether anxiety leads to Trichodynia or Trichodynia leads to anxiety but it is pretty clear that both are associated with each other and further cohort studies are needed to elucidate this fact. Trüeb have found the association between Trichodynia and anxiety.[26] Durusoy et al [18] concluded that anxiety, depression and somatoform disorder can play a role in etiology of Trichodynia.

We conclude that Trichodynia is a very common problem among patients with diffuse hair loss and psychiatric disorder anxiety is significantly associated with it. Although there is no randomized controlled trial for the management of this common disorder but low dose antidepressant and psychotherapy can be tried.[3,14,27] Patients should be counseled that Trichodynia does not show hair loss activity, which can ease the anxiety and can provide the relief from symptoms to some extent. Further case control studies are needed to elucidate the exact pathogenesis, association, and its management and to find out the specific type of Alopecia Areata and Androgenic Alopecia to which Trichodynia is mainly associated.

References

[1]. Rebora A, Semino MT, Guarrera M: Trichodynia (letter). Dermatology 1996;192:292–293.
[2]. Rebora A. Trichodynia: a review of the literature. Int J Dermatol. 2015 Dec 23. doi: 10.1111/ijd.13204.
[3]. Willimann B, Trüeb RM. Hair pain (Trichodynia): frequency and relationship to hair loss and patient gender. Dermatology 2002; 205: 374–377.
[4]. Hoss D, Segal S. Scalp dysesthesia. Arch Dermatol 1998; 134: 327–330.
[5]. Ozturk P, Orhan FO, Ozer A, et al. Evaluation of Anxiety and Levels of Serum B12, Folate, TSH, Ferritin, and Zinc in Telogen Alopecia Patients with Trichodynia. Int J Trichol 2012; 4: 251–254.
[6]. Defrin R, Lurie R. Indications for peripheral and central sensitization in patients with chronic
[7]. scalp pain (Trichodynia). Clin J Pain 2013; 29: 417–424.

[8]. Wang TL, Zhou C, Shen YW, Wang XY, Ding XL, Tian S, et al. Prevalence of androgenetic
[9]. alopecia in China: A community-based study in six cities. Br J Dermatol 2010;162:843-7.
[10]. Kaliyadan F, Nambiar A, Vijayaraghavan S. Androgenetic alopecia: an update.
[11]. Indian J Dermatol Venereol Leprol. 2013 Sep-Oct;79(5):613-25.
[12]. Sehgal VN, Kak R, Aggarwal A, Srivastava G, Rajput P. Male pattern androgenetic alopecia
[13]. in an Indian context: A perspective study. J Eur Acad Dermatol Venereol 2007;21:473-9.
[14]. McMichael AJ, Pearce DJ, Wasserman D, Camacho FT, Fleischer Jr AB, Feldman SR, et al.
[15]. Alopecia in the United States: Outpatient utilization and common prescribing patterns. J Am
[16]. Acad Dermatol 2007;57:S49-51.
[17]. Tan E, Tay YK, Goh CL, Chin Giam Y. The pattern of Alopecia Areata in Singapore - A study of 219 Asians. Int J Dermatol 2002;41:748-53.
[18]. Hamilton M. The Assessment of anxiety scales by rating Br J Med Psychol. 1959; 32:50-55.
[19]. Hamilton MA. Rating scale for depression. J Neurol Neurosurg Psychiatry, 1960; 23:56-62.
[20]. Kivanc_-Altunay I, Savas_ C, G€okdemir G, et al. The presence of Trichodynia in patients
[21]. with Telogen effluvium and androgenetic alopecia. Int J Dermatol 2003; 42: 691–693.
[22]. Rollman GB, Lautenbacher S, Jones KS: Sex and gender differences in responses to
[23]. experimentally induced pain in humans: Sex, gender, and pain; in Fillingim RB (ed): Progress in
[24]. Pain Research and Management. Seattle, IASP Press, 2000, vol 17.
[25]. Cash TF. The psychology of hair loss and its implications for patient care. Clin Dermatol
[26]. 2001; 19: 161–6.
[27]. Baldari M, Montinari M, Guarrera M, et al. Trichodynia is a distinguishing symptom of
[28]. Telogen effluvium. J Eur Acad Dermatol Venereol 2009; 23: 733–734.
[29]. Durusoy C, Ozenli Y, Adiguzel A, et al. The role of psychological factors and serum zinc,
[30]. folate and vitamin B12 levels in the aetiology of Trichodynia: a case-control study. Clin Exp
[31]. Dermatol 2009; 34: 789–792.
[32]. Grimalt R, Ferrando J, Grimalt F. Trichodynia. Dermatology 1998; 196: 374.
[33]. Bolduc C, Lui H, Shapiro J. Alopecia Areata. E-Medicine from WebMD, 2006.
[34]. Hawryluk EB, English JC., 3rd Female adolescent hair disorders. J Pediatr Adolesc
[35]. Gynecol.2009;22:271–81.
[36]. Colón EA, Popkin MK, Callies AL, Dessert NJ, Hordinsky MK. Lifetime prevalence of
[37]. psychiatric disorders in patients with Alopecia Areata. Compr Psychiatry. 1991;32:245–51.
[38]. Koo JY, Shellow WV, Hallman CP, Edwards JE. Alopecia Areata and increased prevalence of psychiatric disorders. Int J Dermatol. 1994;33:849–50.
[39]. Brajac I, Tkalcic M, Dragojević DM, Gruber F. Roles of stress, stress perception and trait-anxiety in the onset and course of Alopecia Areata. J Dermatol. 2003;30:871–8.
[40]. Alfani S, Antinone V, Mozzetta A, Di Pietro C, Mazzanti C, Stella P, et al. Psychological status of patients with Alopecia Areata. Acta Derm Venereol. 2012;92:304–6.
[41]. Trüeb RM. Telogen effluvium and Trichodynia. Dermatology. 1998;196(3):374-5.
[42]. Hoss D, Segal S. Scalp dysesthesia. Arch Dermatol 1998; 134: 327–330.

TABLE 1- Showing socio-demographic profile of Androgenic alopecia patients .

Variables		Patients with Androgenic alopecia N=100 n (%)	Control N=100 n (%)	χ2 /fisher's exact test	df	P value
Age	15-30years	62 (62%)	48(48%)	3.96	1	0.05
	31-50years	38(38%)	52(52%)			
Sex	Male	62(62%)	60(60%)	0.08	1	0.77
	Female	38(38%)	40(40%)			
Education	≤12th	39(39%)	51(51%)	2.91	1	0.09
	> 12th	61 (61%)	49(49%)			
Religion	Hindu	65 (65%)	67(67%)	0.09	1	0.77
	Others	35(35%)	33(33%)			
Socio-economic status	Higher	27(27%)	21(21%)	1.17	2	0.56
	Middle	33 (33%)	33(33%)			
	Lower	40(40%)	46(46%)			
Trichodynia	Present	13(13%)	5(5%)	3.91	1	0.04*
	Absent	87(87%)	95(95%)			

***indicates p <.05 **indicates p<.01**

TABLE 2- Showing socio-demographic profile of Alopecia areata patients .

Variables		Patients with Alopecia Areata N=100 n (%)	Controls N=100 n (%)	χ2 /fisher's exact test	df	P value
Age	15-30years	54(54%)	48(48%)	0.72	1	0.40
	31-50years	46(46%)	52(52%)			
Sex	Male	48(48%)	60(60%)	2.90	1	0.89
	Female	52(52%)	40(40%)			
Education	≤12th	37(37%)	51(51%)	3.98	1	0.05
	> 12th	63(63%)	49(49%)			
Religion	Hindu	66(66%)	67(67%)	0.02	1	0.88
	Others	34(34%)	33(33%)			
Socio-economic status	Higher	16(16%)	21(21%)	1.19	2	0.55
	Middle	39(39%)	33(33%)			
	Lower	45(45%)	46(46%)			
Trichodynia	Present	19(19%)	5(5%)	9.28	1	0.00**
	Absent	81(81%)	95(95%)			

***indicates p <.05 **indicates p<.01**

TABLE 3- Comparing socio-demographic profile of Androgenic alopecia with Alopecia areata patients.

Variables		Patients with Androgenic alopecia N=100 n (%)	Patients with Alopecia areata N=100 n (%)	χ2 /fisher's exact test	df	P value
Age	15-30years	62 (62%)	54(54%)	1.31	1	0.25
	31-50years	38(38%)	46(46%)			
Sex	Male	62(62%)	48(48%)	3.96	1	0.05
	Female	38(38%)	52(52%)			
Education	≤12th	39(39%)	37(37%)	0.09	1	0.77
	> 12th	61 (61%)	63(63%)			
Religion	Hindu	65 (65%)	66(66%)	0.02	1	0.88
	Others	35(35%)	34(34%)			
Socio-economic status	Higher	27(27%)	16(16%)	3.60	2	0.16
	Middle	33 (33%)	39(39%)			
	Lower	40(40%)	45(45%)			
Trichodynia	Present	13(13%)	19(19%)	1.34	1	0.25
	Absent	87(87%)	81(81%)			

***indicates p <.05 **indicates p<.01**

Table 4- Comparing Anxiety and Depression in Patients of Androgenic alopecia with Trichodynia and without Tricodynia.

Variables		Patients of Androgenic alopecia with Trichodynia N=13 n (%)	Patients of Androgenic alopecia without trichodyniaN=33 n (%)	χ2 /fisher's exact test	df	P value
Anxiety	Present	7	3	2.60	1	0.10
	Absent	6	10			
Depression	Present	3	2	0.25	1	0.61
	Absent	10	11			

indicates p <.05 **indicates p<.01

Fischer's exact test was applied, where cell count was less than 5.

Table 5- Comparing Anxiety and Depression in Patients of with Alopecia areata with Trichodynia and without Tricodynia.

Variables		Patients of Alopecia areata with Trichodynia N=19 n (%)	Patients of alopecia areata without trichodynia n (%)	χ^2 /fisher's exact test	df	P value
Anxiety	Present	10	4	4.07	1	0.04*
	Absent	9	15			
Depression	Present	6	3	1.31	1	0.25
	Absent	13	16			

***indicates p <.05 **indicates p<.01**

Fischer's exact test was applied, where cell count was less than 5.