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A STUDY OF THYROID PROFILE ABNORMALITIES IN VITILIGO

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ABSTRACT

Vitiligo, the commonest of all pigmentary disorders is an idiopathic acquired cutaneous achromia characterized by circumscribed chalky white macules. The present study is carried out to know the incidence of abnormalities of thyroid profile i.e., Thyroxine, Tri iodothyronine and Thyroid stimulating hormone in patience of Vitiligo, attending dermatology department Govt. general hospital Kurnool.

INTRODUCTION:

Vitiligo, the commonest of all pigmentary disorders is an idiopathic acquired cutaneous achromia characterized by circumscribed chalky white macules. It may involve the pigmentary epithelium of the eyes, ears and leptomeninges1. It is sometimes familiar and affects subjects of all ages both sexes and all races. Though differences in race, religion, socio economic status and dietary habits do not lead to a significant variation in susceptibility, vitiligo is a variably striking condition on coloured skin especially in Indians. Though it is a cosmetic deformity without any serious adverse implications over general health of the subject, historical references dating back to 600 B.C., bear witness to the importance given to the treatment of Vitiligo1. These reflect immense social stigma associated with the condition. The resultant affect on the psyche of the patient is dramatic, often with a disturbed body image, fear and anxiety2. Although Vitiligo can begin at any age, it develops before the age of 20 years in 50% of patients and before the age of 10 years in 25 % of patients[3]. Actually Vitiligo cannot be considered as a single disease entity but as the end result of an interplay of numerous factors4,5. Studies indicate a higher incidence of organ specific auto antibodies in patients with Vitiligo and a higher incidence of auto immune and /or endocrine diseases in their families, thus adding to the gravity of psycho social and economic implications of the disease in this subset of population[6]. The study was conducted to know the incidence of abnormalities of thyroid profile i.e., thyroxine, tri iodothyronine and thyroid stimulating hormone in patience of Vitiligo, attending dermatology department Govt. general hospital Kurnool.

Materials and Methods

The present study is conducted on clinically diagnosed cases of Vitiligo in the OPD of Dermatology Govt. General Hospital Kurnool from December 2015 to December 2016 for a period of 12 months. 53 patients were included in the study. A detailed history including the age, sex, occupation, socio economic status, duration of the disease, present and past illness, family and personal history were recorded as per the performa. The diagnosis was based mainly on clinical examination. Examination of the thyroid gland is done to evaluate any enlargement of thyroid.

All the patients of Vitiligo attending the OPD of Dermatology were included in this study. 53 age and sex matched patients with other dermatoses excluding Vitiligo are randomly assigned as controls. Routine investigations like urine Examination for albumin, sugar and microscopic examination, complete blood picture, blood sugar, blood urea, serum creatinine are done. Thyroid function tests including thyroxin (T4), tri iodothyronine (T3), Thyroid Stimulating hormone (TSH) are performed. Fine needle aspiration cytology (FNAC) for histopathological examination was done for patient's presenting the enlargement of thyroid gland.

Age Incidence: **Table – 1**

Age (In Years)	No of Cases	Percentage %
0-10	1	1.88
11-20	10	18.86
21-30	20	37.73
31-40	9	16.98
41-50	8	15.09
51-60	5	9.43

The above table shows the peak incidence of vitiligo is in the age group of 21-30 years

Sex Incidence: **Table – 2**

Sex	No of Cases	Percentage %
Males	23	43.39
Females	30	56.60

The above table shows the incidence of vitiligo being slightly higher in females than in males. Male to female ratio is 1:1.30

Clinical Forms: **Table –3**

Type	No of Cases	Percentage %
Focal	6	11.32
Segmental	10	18.86
Generalized	23	43.39
Universal	3	5.66
Acro-Facial	8	15.09
Lip-Tip	2	3.77
Mucosal	1	1.88

Out of 53 patients generalized vitiligo observed in 23 patients, segmental vitiligo is observed in 10 patients, acro –facial 8, focal 6, universal 3, lip tip 2 and mucosal in one patient.

Medical History:

Table – 4

Characteristics	Vitiligo No (%)	Controls No (%)	P- valve
Diabetes Mellitus	6(11.32)	3(5.66)	0.295
Alopecia Areata	3(5.66)	1(1.88)	0.308
Signs and symptoms of Thyroid Disease	17(32.07)	4(7.54)	0.001
Enlargement of Thyroid	4(7.57)	---	0.126
Menstrual disturbances	6(11.32)	3(5.66)	0.0005
Family history of vitiligo	20(37.73)	5(9.43)	0.0485
Emotional disturbances	4(7.54)	1(1.88)	0.359

As shown in above table, there is statistically significant difference between vitiligo patients and controls is observed regarding family history of vitiligo signs and symptoms of thyroid disease.

Table 5: Thyroid function tests

Thyroid function tests in vltiligo patients

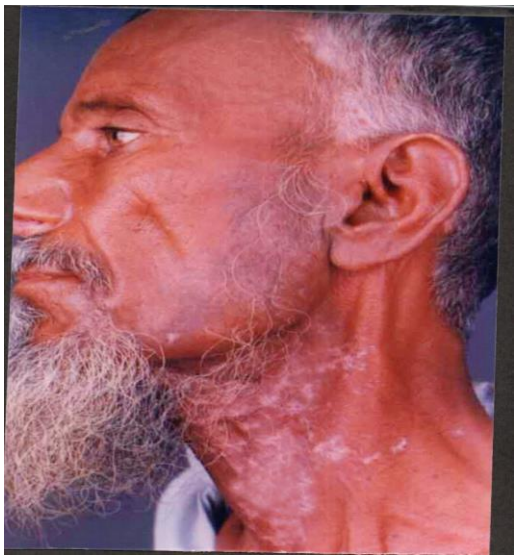
S. No	Tri iodo thyronine	Thyroxine	Thyroid stimulating hormone
1	114.2	8.90	1.31
2	127.4	6.93	0.75
3	159.6	5.60	15.56
4	163.2	11.8	10.42
5	160.72	4.21	5.01
6	95.10	5.57	0.91
7	112.21	6.50	1.20
8	101.65	7.98	0.91
9	150.12	6.05	4.01
10	89.01	5.36	2.34
11	64.20	3.85	0.74
12	210.21	10.3	2.51
13	112.0	7.14	1.95
14	111.21	8.90	1.31
15	85.20	5.90	1.31
16	45.21	1.99	5.01
17	127.4	6.93	0.75
18	180.5	12.59	0.12
19	40.21	5.20	10.1
20	109.60	4.21	0.40
21	111.64	3.40	5.90

22	202.30	14.0	0.20
23	101.99	6.01	8.10
24	193.4	8.50	0.73
25	180.20	5.9	1.20
26	164.15	9.50	0.88
27	203.19	11.91	0.12
28	154.4	8.3	1.55
29	119.6	7.2	2.78
30	191.4	9.8	1.48
31	136.9	7.5	0.95
32	81.2	4.1	5.1
33	116.4	6.4	1.44
34	165.8	10.6	1.88
35	160.3	8.4	3.12
36	91.3	6.6	1.77
37	116.2	6.4	1.44
38	129.1	9.0	1.60
39	103.2	7.9	0.10
40	116.3	6.6	1.64
41	163.1	11.8	1.20
42	110.4	8.2	1.20
43	215.6	7.2	2.31
44	153.1	7.2	0.15
45	241.9	9.0	2.26
46	228.2	8.7	0.19
47	203.8	2.8	1.21
48	96.4	4.21	3.44
49	203.7	4.4	45.36
50	73.2	4.8	6.2
51	150	6.05	4.25
52	92	4.64	0.35
53	179	7.5	1.60

Percentage of thyroid function abnormalities in relation to morphological types of Vitiligo.

Table – 6

Clinical Variety	**No of cases showing abnormal Thyroid functional tests**	**Percentage %**
Focal	1	1.88
Segmental	2	3.77
Generalized	10	18.86
Universal	1	1.88
Lip-Tip	-	-
Acro-Facial	4	7.54
Mucosal	-	-
TOTAL	18	33.96



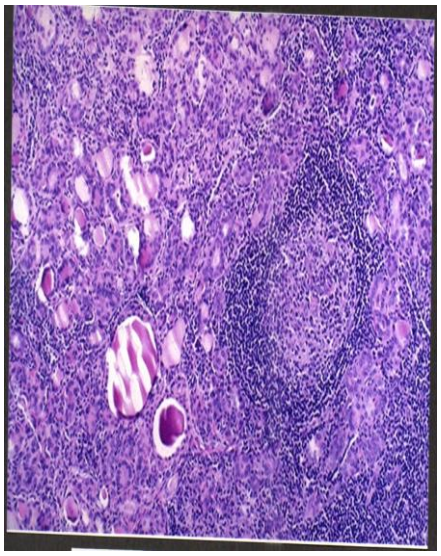


Fig no.1: Vitiligo over enlarged thyroid gland and Histopathology of Thyroid gland.

Discussion:

Vitiligo can occur in association with a variety of systemic disorders, mainly of autoimmune in nature. Recent studies have confirmed a significant association between vitiligo and thyroid diseases like hyperthyroidism, hypothyroidism and hashimotos thyroiditis. In our study the prevalence of thyroid function abnormalities in vitiligo patients is 33.96% which is significantly higher than in control group with p-value 0.001.

S. No	Author	Year of study	Percentage of thyroid function abnormality
1	W.J Cunliffe et al	1968	30
2	Yukio ochi et al	1969	7
3	Miklaszewska	1972	12.5
4	Fitzpatrick et al	1987	12.5
5	V.K arora et al	1990	27.27
6	Rie ueki et al	1993	21.2
7	Schallreuter	1994	15.88
8	Laszlo hegdus et al	1994	23
9	A.Kurtev et al	2004	13.79

Observations and Results

Our results are more or less in line with following reported studies worldwide. Data collected from fifty three cases clinically diagnosed as vitilgo for a period of one year from December 2015- December 2016 formed the basis of study.

SUMMARY AND CONCLUSIONS

1. Females are frequently affected than males in the ratio of 1:3:1.
2. The age group ranged from 10-60 years with maximum incidence in between 21-30 years
3. Thyroid function tests are done by ratio immune assay and abnormalities in thyroid are found in 33.96% of patients compared to 7.54 % of controls.
4. Family history of vitiligo observed in 20 patients (37.33%) compared to 5 (9.43%) of controls.
5. Signs and symptoms of thyroid disease are present in 32.07 % patients of vitiligo and 7.54% of controls
6. Out of 4 patients with thyroid enlargement one patient is diagnosed to have grave's disease, and remaining 3 patients are diagnoses to have Hashimoto's thyroiditis.
7. Generalized vitiligo showed higher incidence of thyroid abnormalities [18.86%0 compared to other clinical forms.
8. Females showed higher incidence of thyroid dysfunction compared to males.
9. Diabetes mellitus, alopecia areata, menstrual and emotional disturbances are more frequently associated with vitiligo patients compared to controls.

In conclusion the present study has shown that autoimmune thyroid diseases both in the form of hypo and hyperthyroidism are frequently associated with vitiligo patients. Further studies are required to elucidate the mechanism of association. Finally our results strongly recommended that all patients of vitiligo, especially generalized forms should be systematically screened for the presence of thyroid disease at least once a year.

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