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Original Research Article

Childhood Vitiligo: A Clinicoepidemiological Study at Eastern India

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Conflict of interest: Nil

Abstract

Background: The present study was conducted in Dermatology OPD of Bankura Sammilani Medical College between February 2015 to January 2016. The aim of the study was to find epidemiological pattern, most common type and sites affected in vitiligo in <12 yr age group.

Methodology: All the patients below 12 yrs with vitiligo attending Dermatology Outdoor, satisfying the inclusion criteria were enlisted. Detailed history taking & thorough clinical examination was done & all this was recorded in case record form to determine epidemiological profile of the paediatric patients. The patients were divided in to 2 age groups (0-5yrs & 6 to 12 years). To find the types of vitiligo prevalent in paediatric age group and also to find the most common type seen in those age groups (0-5yrs & 6 to 12). To find common sites affected in these age groups and also the most common site affected overall in such age groups. History taking and clinical examination as per case record form were done to study clinic-epidemiological profile of childhood vitiligo. The descriptive statistics were expressed as frequency, percentage. Microsoft excel were used for drawing the graph. Microsoft Power Point was used for drawing the road map.

Results: In this study 8.65% children had family history of vitiligo and 91.35% didn't have. About 8.65% of children had stable vitiligo and 91.35% had unstable vitiligo. Koebner's phenomena was noted in 17.31% and was absent in other 82.69%. Leukotrichia was present in 22.12% cases and absent in 77.88% cases. In my study Halo nevi was present in 5.77% cases and melanocytic nevi, alopecia areata and psoriasis in 0.96% cases. Autoimmune disease was present in 1.92% cases in which 0.96% is psoriasis and other 0.96% is alopecia areata. Most common sites affected in males was right leg with 35.9% and in females was face with 49.23%. Mean age of onset of vitiligo was 5.77 yrs in males and 6.46 yrs in females.

Conclusion: itiligo is occasionally associated with autoimmune disease and hence a patient with vitiligo should be evaluated to rule out these conditions. Social stigma associated with the disease should be combated with awareness in the society.

Keywords: Vitiligo, Childhood, Clinco-epidemiology, Eastern India.

Introduction

Vitiligo is a common acquired idiopathic hypo/depigmented disorder, characterized by chalky-white or milky macules due to total loss of skin pigmentation. The documentation of word "vitiligo" was done by Roman physician Celcus. [1] Vitiligo has worldwide distribution with a prevalence rate of 0.1-2%. [2] It is commonly seen in childhood or young adult with a peak age of onset 10-30 years; though it may occur at any age. Both sexes are affected equally; though female preponderance has been reported in some studies. It is a common acquired depigmented skin lesion characterized by well circumscribed ivory or chalky white macule/patch and hair over the lesion may be normal or white (leucotrichia). The etiology of vitiligo is unknown; it is believed to be multifactorial in origin. Many genes have been implicated in its pathogenesis. It has been found to be associated with various autoimmune diseases such as thyroid disorders, Addison's disease,

diabetes mellitus, alopecia areata, pernicious anaemia, and systemic lupus erythematosus and Inflammatory bowel disease. [3] Clinically it is characterized by sharply demarcated hypo/ depigmented macules with no surface change. There are various patterns of vitiligo such as vitiligo vulgaris, segmental vitiligo, focal vitiligo, acro-facial vitiligo, vitiligo universalis & mucosal vitiligo. Overall, most common pattern is generalized vitiligo or vitiligo vulgaris, seen in 64.73% subjects. [4]

Childhood vitiligo, comprising 20% of total vitiligo patients. [5] It differs from adult vitiligo in many aspects. In children most frequent pattern is segmental vitiligo (41.3%) [6] with a positive family history present in 13.8% of children [7], halo nevi present in 2.5% of children, [8] koebner phenomenon present in 11.3% of children. [8] This study was aimed to determine clinico-epidemiological profile of vitiligo in children (<12yrs) of age attending dermatology OPD in a tertiary care centre.

Materials and Methods

The institutional based observational study was conducted at Dermatology Outdoor of a tertiary care centre of Bankura Medical College in eastern India. All vitiligo patients attending Dermatology Outdoor of Bankura Medical College & Hospital of age less than 12 yrs between February 2015 to January 2016. Studied 104 cases of vitiligo less than 12 yrs of age. All vitiligo patients less than 12 yrs were clinically evaluated, and those who satisfied inclusion & exclusion criteria vide infra, were included in the study.

Inclusion Criteria for Case Group

1. Age less than 12 yrs of age
2. Clinically diagnosed new patients of vitiligo.
3. Those who gave informed consent to the study.

Exclusion Criteria

1. Leukoderma (chemical)
2. Those with hypopigmented non-vitiligo skin condition viz post inflammatory hypopigmentation, nevus depigmentosus, lichen sclerosus et atrophicus.
3. Persons above 12 yrs of age
4. Those receiving treatment
5. Those who did not give consent

All the patients below 12 yrs with vitiligo attending Dermatology Outdoor, satisfying the inclusion criteria were enlisted. Detailed history taking & thorough clinical examination was done & all this was recorded in case record form to determine epidemiological profile of the paediatric patients. The patients were divided into 2 age groups (0-5yrs & 6 to 12 years). To find the types of vitiligo prevalent in paediatric age group and also to find the most common type seen in those age groups (0-5yrs & 6 to 12). To find common sites affected in these age groups and also the most common site affected overall in such age groups. History taking and clinical examination as per case record form were done to study clinic-epidemiological profile of childhood vitiligo. The descriptive statistics were expressed as frequency, percentage. Microsoft excel were used for drawing the graph. Microsoft Power Point was used for drawing the road map.

Results

In the present study 104 patients with vitiligo included, in which 52(50%) were (0-5 yrs) and 52 (50%) were (6-12 yrs). There were 39 males (37.5%) and 65 (72.5%) females. About 90.38% of patients were Hindus and 9.62% were Muslims. Approx 36.54% patients were above poverty line and 63.46% below poverty line. Family history was present in 8.65% of cases and absent in 91.35% of cases. 33.33% of children had onset of vitiligo in (0-5yr) period and 66.66% in 6-12 yr period in those with positive family history. Among the study patients 8.65% had stable vitiligo and 91.35% were unstable vitiligo. Koebner phenomena was present in 17.31% of patients and absent in 82.69% of patients. Leukotrichia was present in 22.12% of patients and absent in 77.88% of patients. Halonevi was present in 5.77% of cases, melanocytic nevi present in 0.96% of cases, and autoimmune disease association in 1.92% cases among which 0.96% is alopecia areata and 0.96% is psoriasis [Table 1].

Table 1: Demographic and clinical characteristics among study participants

Hindu	94 (90.38%)
Muslim	10 (9.62%)
Above Poverty Line	38 (36.54%)
Below Poverty Line	66 (63.46%)
Family History Present	9(8.65%)
Absent	95(91.35%)
Stable	9(8.65%)
Unstable	95(91.35%)
Koebner Present	18(17.31%)
Absent	86(82.69%)

Leukotrichia Present	23(22.12%)
Absent	81(77.88%)
Association Halo nevi	6(5.77%)
Melanocytic nevi	1(0.96%)
Alopecia areata	1(0.96%)
Psoriasis	1(0.96%)

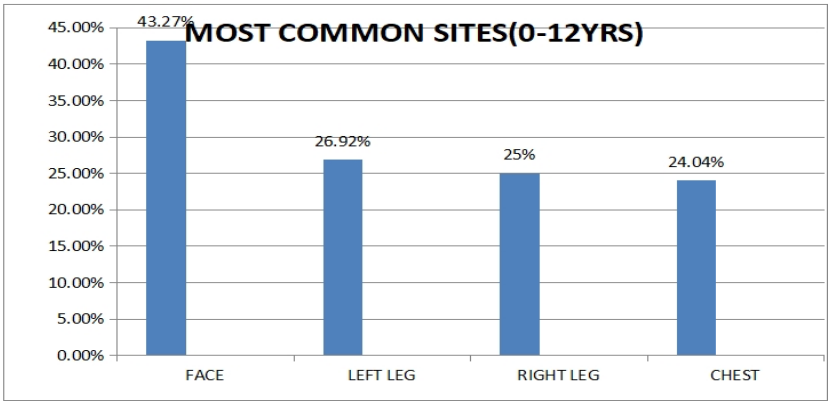

Figure 1: Most common sites (0-12 YRS)

Most common site of vitiligo overall (0-12yrs) is face (43.27%)> left leg (26.92%)> right leg (25) > chest (24.04%) [Fig. 1].

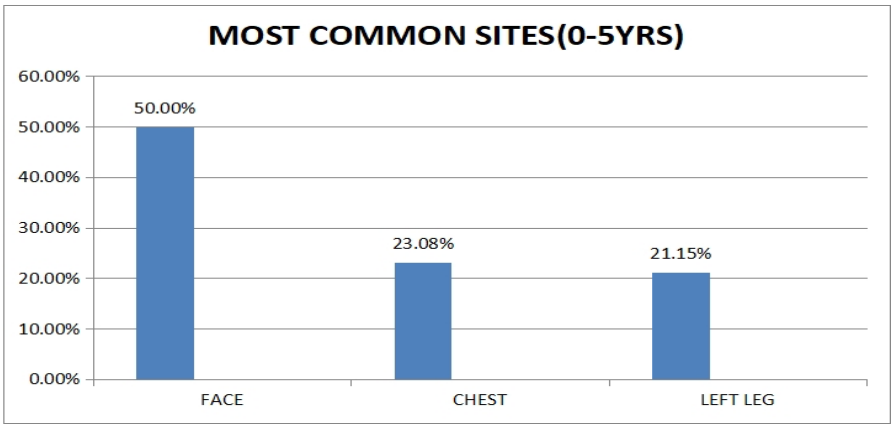

Figure 2: Most Common sites (0-5 YRS)

For 0-5 yrs Most common site is face (50 %) > chest (23.08%) > left leg (21.15%) [Fig. 2].

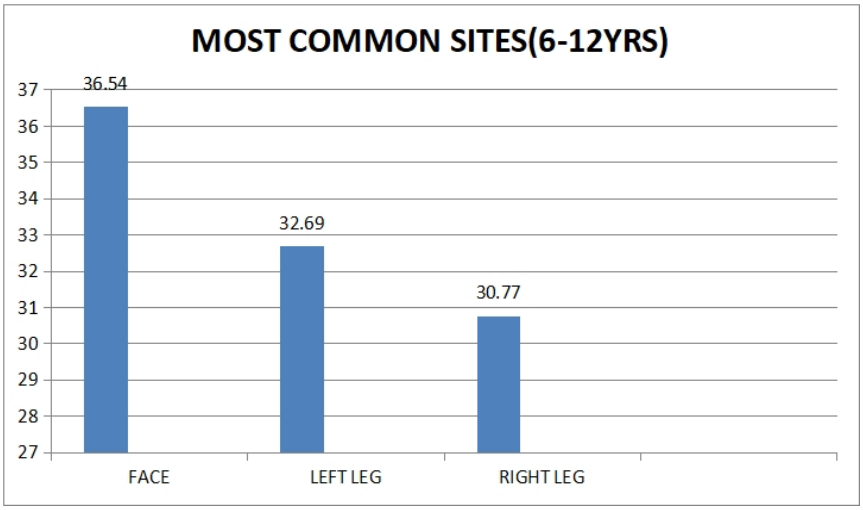

Figure 3: Most Common Sites (6-12 YRS)

For 6-12 yrs most common site is face (36.54%)> left leg (32.69%)> right leg (30.77%) [Fig. 3].

Table 2: Types of vitiligo according to age class

Types	0-5 Yrs	6-12 Yrs	Total
Focal	37 (71.15%)	23 (44.23%)	60 (57.69%)
Vitiligo vulgaris	5 (9.62%)	18 (34.62%)	23 (22.12%)
Segmental	5 (9.62%)	4 (7.69%)	9 (8.65%)
Acrofacial	1 (1.92%)	1 (1.92%)	2 (1.92%)
Mucosal	4 (7.69%)	6 (11.54%)	10 (9.62%)
Total	52	52	104

In 0-5 yr age group focal was the most common type with 71.15%, followed by vulgaris and Segmental with 9.62% and mucosal with 7.69% and acrofacial least with 1.92%.

In 6-12 yr age group focal vitiligo was highest with 44.23% followed by vulgaris 34.62%, mucosal with 11.54%, segmental with 7.69% and acrofacial least with 1.92%. In 0-12yr age group focal vitiligo was most common with 57.69%, followed by vulgaris with 22.12%, mucosal 9.62%, segmental 8.65% and acrofacial least with 1.92%. Most common dermatome involved in segmental vitiligo in my study is trigeminal (77.78%).

Mean age of onset of vitiligo is 6.19 years. In my study there were 39 males and 65 females [Table 2].

Table 3: Sex wise distribution

	Male	Female	Total
Focal	25(64.1%)	35(53.85%)	60
Vulgaris	9(23.08%)	14(21.54%)	23
Segmental	2(5.13%)	7(10.77%)	9
Acrofacial	1(2.56%)	1(1.54%)	2
Mucosal	2(5.13%)	8(12.31%)	10
Total	39(37.5%)	65(72.5%)	104

In sex wise distribution focal vitiligo was most common with 64.1% followed by vulgaris with 23.08%, mucosal and segmental with 5.13% and acrofacial with 2.56%.

In females focal vitiligo was most common type with 53.85%, followed by vulgaris with 21.54%, mucosal with 12.31%, segmental 10.77% and acrofacial is least with 1.54% [Table 3]. In males, most common sites affected are as follows left leg (35.9%)> chest & face (33.33%)> right leg (30.77%). In females most common sites affected are as follows face (49.23%)> right & left leg (21.54%)> scalp (20%).

In males mean age of onset of vitiligo is 5.77 yrs. In females mean age of onset of vitiligo is 6.46 yrs. Mean age of onset of vitiligo is 6.19 yrs.

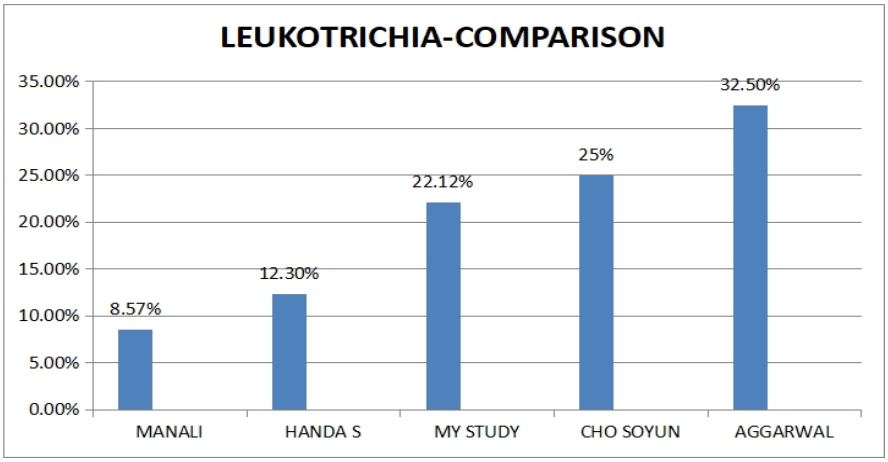

Figure 4: Leukotrichia-Comparison

Leukotrichia is present in 22.12% in my study which is higher than Manali et al [9] (8.57%), Handa et al (12.3%) [8] and lower than Cho Soyun et al (25%) [7], Aggarwal S et al [10] (32.5%) [Fig. 4].

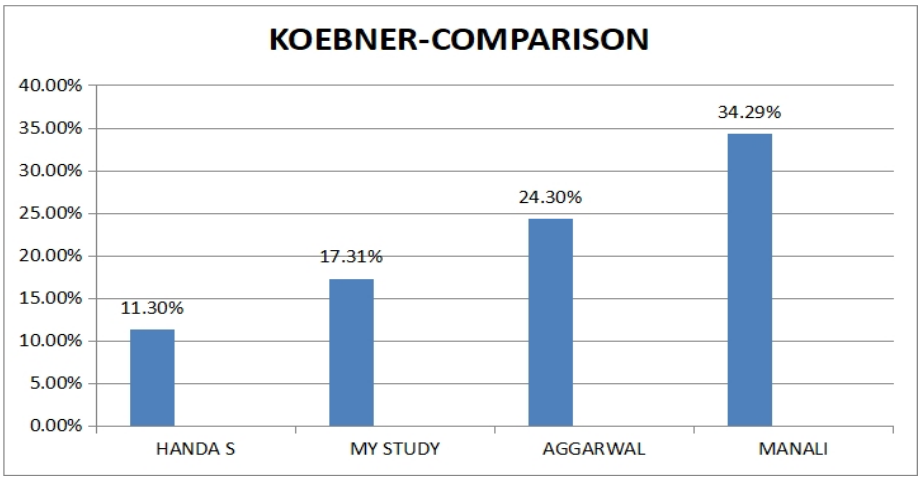

Figure 5: Koebner-Comparison

Koebner is found in 17.31% in the present study which is higher than Handa S et al [8] (11.3%) and lower than Aggarwal S et al (24.3%) [10] and Manali et al (34.29%) [9] [Fig. 5].

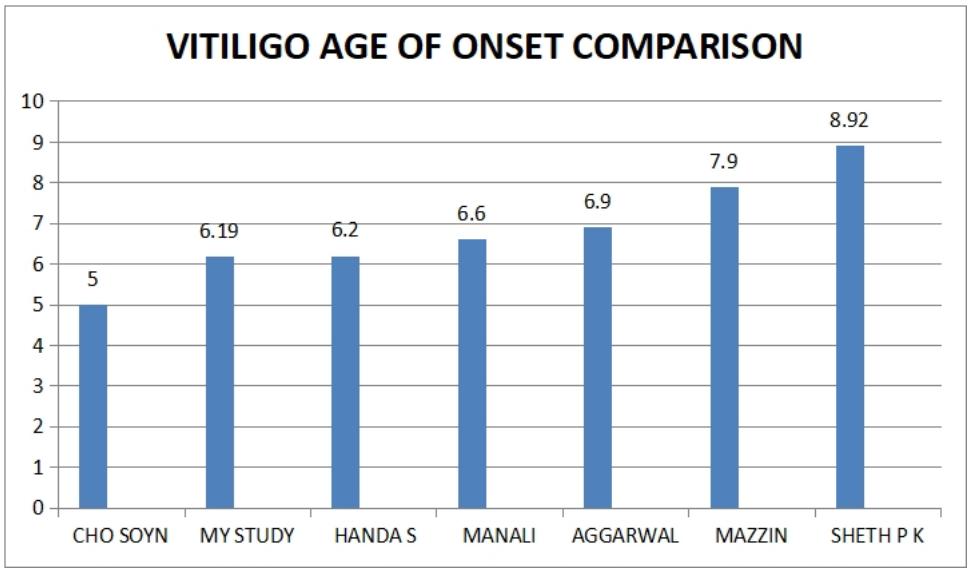

Figure 6: Vitiligo age of onset comparison

In the present study the age of onset of vitiligo is 6.19 yrs,which is same as Handa S et al study [8] (6.2 yrs). It is higher age than Cho Soyun et al study [7] (5 yrs) and lower age than Manali et al (6.6 yrs) [9], Aggarwal S et al10 (6.9 yrs), Mazzin Mohammed et al [11] (7.9 yrs), Sheth P K et al [12] (8.92 yrs) Fig. 6].

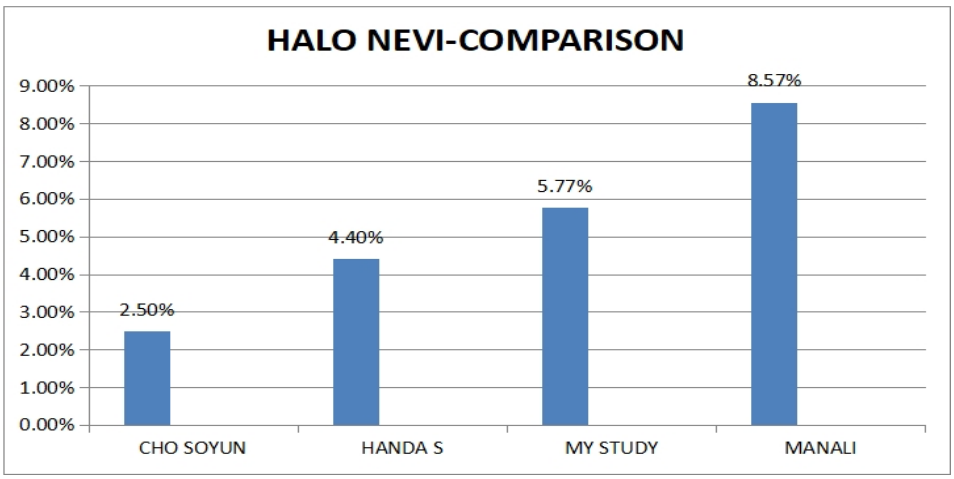

Figure 7: Halo Nevi-Comparison

Halo nevi found in the present study is 5.77% which is hgher than Cho Soyun et al [7] (2.5%), Handa s et al [8] (4.4%) and lower than Manali et al [9] (8.57%) [Fig. 7].

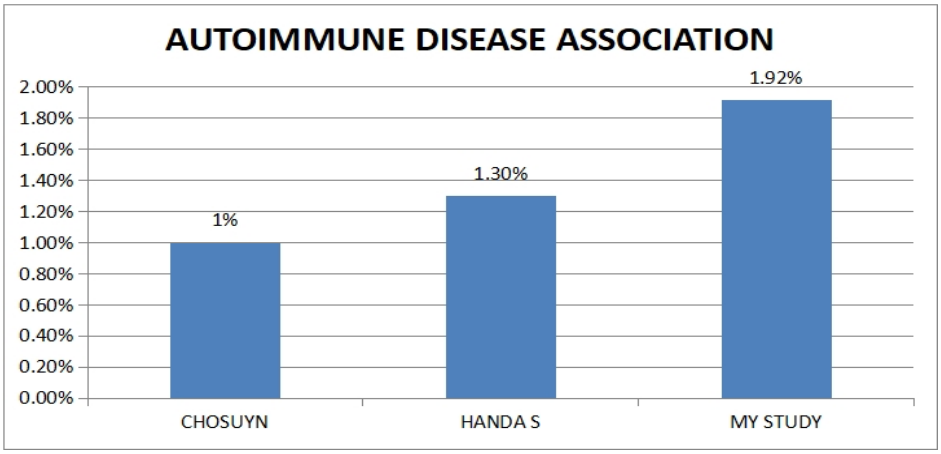

Figure 8: Autoimmune disease association

Autoimmune disease present in 1.92% in the present study which is higher than Cho Soyun et al[7] (1%) and Handa s et al[8] (1.3%) [Fig. 8].

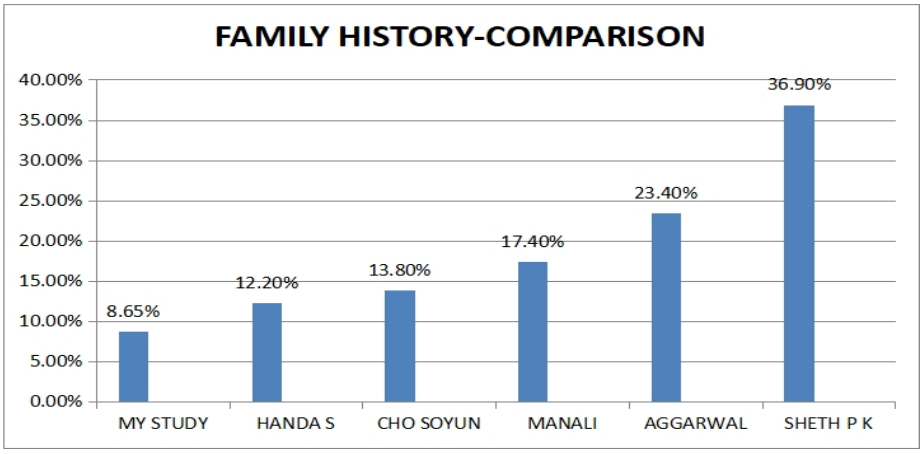

Figure 9: Family history comparison

Family history of vitiligo in the present study is 8.65%. Which is lower than Handa et al [8] (12.2%), Cho Soyn et al [7] (13.8%), Manali et al [9] (17.4%), Aggarwal s et al [10] (24.3%), Sheth P K et al [12] (36.9%) [Fig. 9]. In contrast to other studies we got focal vitiligo as most common childhood vitiligo. In the present study focal (57.69%)> vulgaris (22.12%)> mucosal (9.62%)>segmental (8.65%)>acrofacial (1.92%). In Handa S et al [8]-Vulgaris>Focal>Segmental> Acrofacial>Mucosal>Universal; Manali et al [9]-Vulgaris>Focal>Segmental> Mucosal>Mixed>Acrofacial; Sheth P K et al [12]-Vulgaris>Focal>Mucosal>Acrofacial>Segmental; Mazzin Mohammed et al [11]-Vulgaris>Acrofacial>Focal>Segmental; Aggarwal S et al [10]- Acrofacial>Vulgaris> Segmental>Focal>Mucosal. In the present study the most common site was face (43.27%)> lower leg (40.38%)> chest (24.04%)> scalp (18.27%). It is in contrast to study by Sheth P K et al lower leg (62%)> face (46%)> upper limb (30%)> scalp (25%).

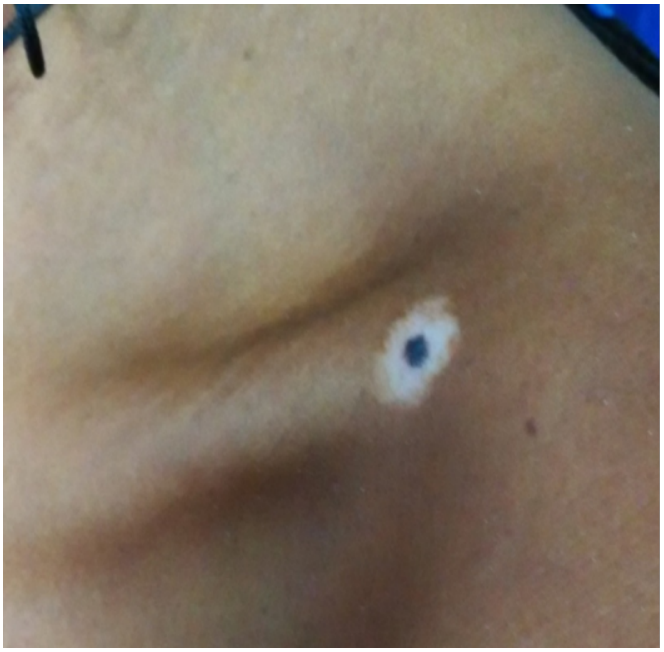

Figure 10: Halo Nevi

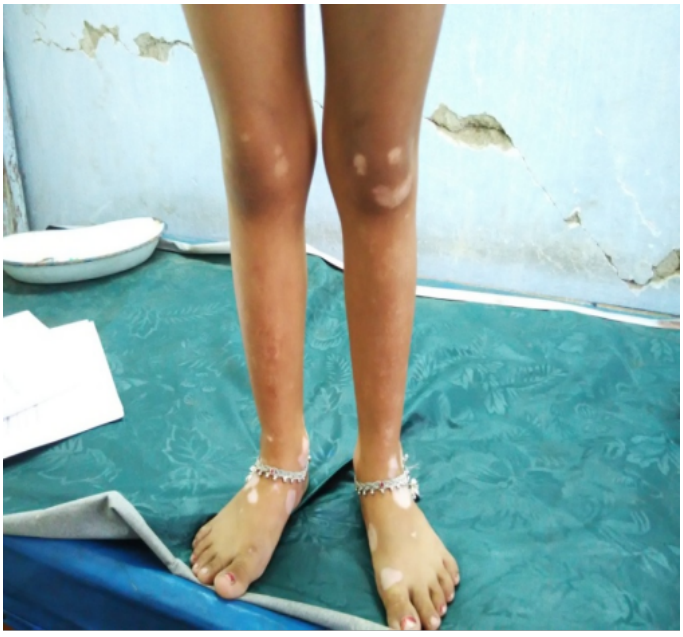

Figure 11: Vitiligo Vulgaris

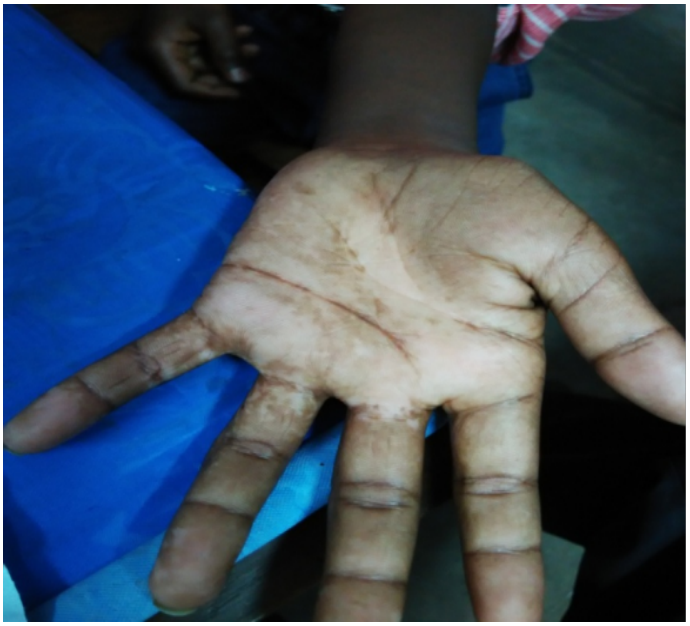

Figure 12: Acral Vitiligo

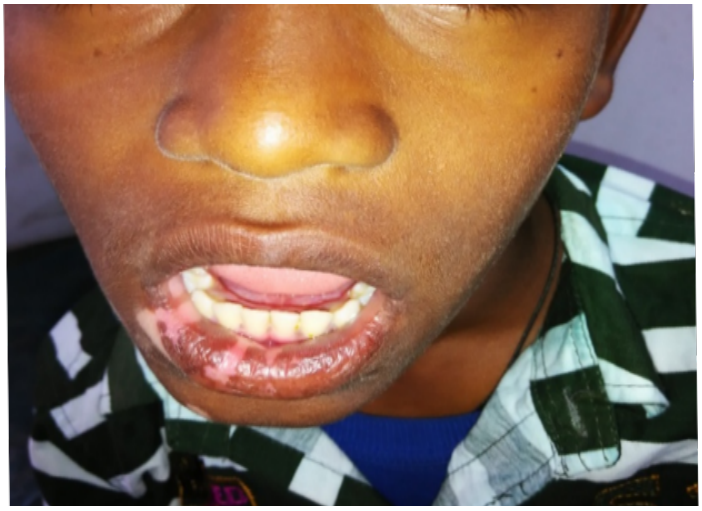

Figure 13: Mucosal Vitiligo

Discussion

Vitiligo is a common acquired idiopathic hypo or depigmented disorder, characterized by chalky-white or milky macules. Present study was aimed to find the clinico-epidemiological pattern of vitiligo less than 12 yrs of age. The study was conducted at Dermatology outdoor of Bankura Sammilani Medical College from February 2015-January 2016. We studied 104 patients with vitiligo of which 52 (50%) were (0-5yrs) of age and other 52 (50%) were 6-12yrs of age. In this study (36.54%) were above and (63.46%) were below poverty line. Since Bankura is a poor district these results are consistent with the socioeconomic condition prevalent here. In this study, there were 39 (37.5%) males and 65(62.5%) females. It is almost similar to the study by Jaisankar T J et al [5] in North India in which 38.9% were boys and 61.1% were girls. The female predominance was also found in studies by Handa S et al [8] (57.1%), Cho Soyn et al [7] (51.25%), Manali et al [9] (57.1%), Sheth P K12 (55%), Mazzin Mohammed et al [11] (63.2%), Aggarwal S et al [10] (56.7%) and Ashu Kayal et al (25) (59.63%). The probable reason for female predominance can be because of more cosmetics concern among female, difficulties in getting married in future.

This social stigma also affected the children with this disease who were isolated (n=12) from their peer-group because of the fear of infectious nature of the illness, a misconception which is deep-rooted in the society even in this 21st century. This social ostracism affects the mental health of the sufferer and in turn has tremendous effect on the quality of life of the patients. This highlights the social stigma associated with the disease and awareness of the general population is desired to combat this problem.

In this study the mean age of onset of vitiligo was 6.19 yrs which is almost same as study by Handa S et al [8] (6.20 yrs). It is higher than the study by Cho Soyn et al [7] (5 yrs) and lower than the studies by Manali et al [9] (6.6 yrs), Aggarwal et al [10] (6.9 yrs), Mazzin Mohammed et al [11] (7.9 yrs) and Sheth P K et al [12] (8.92 yrs). Leukotrichia was present in (22.12%) in my study which is higher than Manali et al [9] (8.57%), Handa S et al [8] (12.3%) and lower than Cho Soyn et al [7] (25%) and Aggarwal S et al [10] (32.5%). Koebners phenomena was seen in (17.31%) of children in my study which was higher than study by Handa S et al [8] (11.3%) and lower than that by Aggarwal S et al [10] (24.3%) and Manali et al [9] (34.29%).

Positive family history of vitiligo in either first or second degree relative was present in 8.65% of my study population which is lower than studies by Handa S et al [8] (12.2%), Cho Soyn et al [7] (13.8%), Manali et a l(17.4%) [9], Aggarwal S et al [10] (24.3%), Sheth P K etal12 (36.9%). In India, it ranges from 6.25-18% [13] in some studies to is as high as 30- 40% [14]. Positive family history of vitiligo may support its polygenic or autosomal dominant inheritance pattern with incomplete penetrance and variable expression in vitiligo patients.

In our study we also comparered clinico-demographic pattern of early and delayed onset pediatric vitiligo. One study conducted by Pajvani et al [15] showed that patients with extended family history of vitiligo developed vitiligo 4 time more likely before 7 years of age than patients with negative family history. Hence, we divided our pediatric population into early onset (0-5yrs) and delayed onset (6-12 yrs) pediatric vitiligo and tried to find out truly if there was any significant difference in clinico-demographic pattern between these two groups. In contrast to study by Pajvani et al [15] positive family history was less in early onset (0-5yr) group 3, (33.33%) and higher in late onset pediatric vitiligo group 6, (66.66%) in our study.

Halo nevi was associated with vitiligo in (5.77%) in my study which is higher than studies by Cho Soyn et al [7] (2.5%), Handa S et al [8] (4.4%) and lower than that by Manali et al [9] (8.57%). The reason behind increased frequency of halo nevus associated within pediatric onset of vitiligo in my study may be due ethnic and regional variation.

Combined autoimmune disease was present in 1.92% of present study study which was higher than studies by Cho Soyn et al [7] (1%) and Handa S et al [8] (1.3%). In contarast to other studies, we found focal vitiligo (57.6%) as the most common type. In other studies by Handa S et al [8], Manali et al [9], Sheth P K et al [12], Mazzin Mohammed et al [11], Aggarwal S et al [10] vitiligo vulgaris as reported to be most common type.

In the present study study most common site of involvement at the time of presentation was face (43.27%)> lower leg (40.38%)> chest (24.04%)> scalp (18.22%) which is in contrast to study by Sheth p k et al [12] [lower leg (62%)>face (46.6%)>upper limb (30%)>scalp (25%]. The variation of results in my study from other studies may be due to difference in study population and and different study areas selected for study.

Conclusion

Childhood or pediatric onset vitiligo patients contribute a significant number among all vitiligo patients. In pediatric onset vitiligo females outnumber male patients due to social concerns. Pediatric onset vitiligo patients seek treatment or medical assistance earlier because parents are more anxious and worried about the disease condition of their children.

In the present study there was a higher percentage of focal vitiligo than other types of vitiligo. This may be due to the fact that patients and their families are more self-aware these days and they visit the medical facilities as soon as a single or few white patches are detected. The variation of results in our study from other studies may be due to difference in study population and and different study areas selected. Vitiligo is occasionally associated with autoimmune disease and hence a patient with vitiligo should be evaluated to rule out these conditions. Social stigma associated with the disease should be combated with awareness in the society.

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