Vitiligo: Any Differences in Adult and Childhood Clinical Characteristics

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ABSTRACT

BACKGROUND: *Vitiligo occurs in both children and adults, average age of onset is before twenty years in at least half of adult cases and five years in children. In Nigeria, there are relatively few literatures specifically comparing clinical characteristic between adult and childhood vitiligo in order to identify any differences in our environment as elsewhere.*

AIMS AND OBJECTIVES: *The objectives were to identify any differences in clinical characteristics between childhood and adult vitiligo.*

METHODOLOGY: *A record based review of clinical characteristics of one hundred and one vitiligo patients at the out-patient clinic from 2005 to 2009 was conducted. Socio-demographic variables were assessed using a structured questionnaire.*

RESULTS: *Prevalence of vitiligo was 6.5%. Of the 111cases retrieved, 68.5% were adults and 31.5% were children. Significant differences between adult and childhood vitiligo include; preponderance of females in childhood vitiligo (34.3% males versus 65.7% females) and of males in adult vitiligo (57.9% males versus 42.1% females). Re-pigmentation of lesions following treatment was more in children (82.4% versus 56.7% in adults). Reported history of spread of lesions was 72.7% in children and 49.2% in adults. Commonest class of vitiligo is segmental in childhood study population (45.7%) and acrofacial in adults (36%). The vulva as area of onset was observed only in children.*

CONCLUSION: *Significant differences in clinical characteristics between adult and childhood vitiligo exist. These include; gender, re-pigmentation, spread of lesions and class of vitiligo. Only children have the vulva as the area of onset of vitiligo.*

KEYWORDS: *Vitiligo, Adult/childhood Differences, Clinical Characteristics*

INTRODUCTION

Vitiligo is an acquired, non-contagious disorder characterized by progressive, patchy loss of pigmentation from skin, hair, mucous membranes, eyes, inner ear.[1] Worldwide, the prevalence of vitiligo varies from 0.5% to 2%, and varies from 2% to 6% in Nigeria.[2-5] Vitiligo occurs in both children and adults.[1,6,7] Most of the studies on vitiligo have been in adult patients and only few studies have included children.[9-10] Differences in clinical presentation, disease progression

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and management options between adult and childhood vitiligo have also been documented.[11,12] In Nigeria, there have been no clearly focused studies on children who have vitiligo despite the documented occurrence of vitiligo in children.[13-15] There is also, lack of documented knowledge of any existence in clinical differences between adult and childhood vitiligo as is documented elsewhere.[1,6,16] The aim of this study is to identify differences between childhood and adult vitiligo clinical characteristics.

METHODOLOGY

This was a retrospective study. A record based review of clinical characteristics of patients diagnosed with vitiligo who, attended the dermatology outpatient clinic of the University College Hospital (UCH) Ibadan with vitiligo from January 2005 to December 2009 was conducted.One hundred and thirty vitiligo patients attended the clinic during the 5 year study period but only 111 of the 130 case notes were available from the hospital's medical records. In this study, children were 17 years and below, and adults years and above. A questionnaire was used to document patient's socio-demographic data and clinical characteristics. The rule of nine was used to grade the severity of vitiligo. The type of vitiligo in this study was based on the Nordlund's classification.[17]

Nordlund classification

This classification is based on distribution and extent of lesions.[17] There are three types of vitiligo in this classification; localized, generalized and universal vitiligo.[17]

1. Localized vitiligo which is further classified into;
- Focal: one or more patches in one area but not in a segmental pattern and
- Segmental: one or more maculae in a dermatomal distribution. Lesions are unilateral and tend to favour the face.

2. Generalized vitiligo: Lesions are symmetrical; involve the hands, feet, elbows, wrists, perioral areas and axillae. Generalised vitiligo is also known as non-segmental vitiligo and can be subdivided into;
- Acrofacial: affecting face and distal extremities
- Vulgaris: the most common variety, with a symmetrical distribution of lesions and
- Mixed: segmental plus vulgaris or acrofacial types.

Universal vitiligo: involves more than 50-80% of the body surface area Ethical clearance was obtained from the research and ethics committee of the hospital. Permission to assess patient case records was also obtained from the hospital administration.

Data was analyzed using SPSS version 16.[18] Quantitative variables were summarized using mean, median, standard deviation and range while frequencies and proportions were used for categorical variables. Associations between qualitative variables were tested using the chi square test. The level of significance was set at 5%. Where data was incomplete due to none documentation, it was left out of the data analysis.

RESULTS

Over the study period of 5 years, 1970 patients were attended to at the dermatology clinic of which 130 were vitiligo patients. The prevalence of vitiligo was found to be 6.6%.
111 patient records were retrieved out of the

130 vitiligo cases seen during the 5 year study period giving a retrieval rate of 85.4%. This study population was made up of 35 (31.5%) children and 76 (68.5%) adults. The children were made up of 12 males (34.3%) and 23 females (65.7%). The adults comprised of 44 males (57.9%) and 32 females (42.1%)

Table 1 shows the distribution of the socio-demographic and vitiligo-related variables of the children. At presentation, 71.4% of the children were aged 0 – 10 years while 28.6% were aged 11 – 17 years. Only 1 of the 35 children had a family history of vitiligo, 100% were asymptomatic, 100% had no comorbidities. A history of spread of lesions at presentation was reported in 72.7% of children. The commonest area of onset was the face/scalp (51.4%). Using the "rule of nine", the severity of vitiligo was <9% in 97.1% of cases. Leukotrichia was reported in 8.6% cases. Vitiligo was in a visible (exposed) part of the body in 88.6%. Re-pigmentation following treatment was noted in 82.4%, 85.7% presented with a duration of >1 year. The commonest class of vitiligo was segmental.

Table 1: Distribution of Variables in Children

	Children(≤17)		
	Male (n=12)	Female (n=23)	Total (n=35)
Age at onset of vitiligo (years)			
0 – 5	2(16.7)	7(30.4)	9(25.7)
6 – 10	7(58.3)	12(52.2)	19(54.3)
≥11	3(25.0)	4(17.4)	7(20.0)
Family history			
Yes	1(8.3)	0(0.0)	1(2.9)
No	11(91.7)	23(100)	34(97.1)
Area of onset			
Buccal mucosa	1(8.3)	0(0.0)	1(2.9)
Face/scalp	6(50.0)	12(52.2)	18(51.4)
Lower limb	3(25.0)	1(4.3)	4(11.4)
Neck	1(8.3)	0(0.0)	1(2.9)
Upper limb	1(8.3)	6(26.1)	7(20.0)
Vulva	0(0.0)	4(17.3)	4(11.5)
Koebnerization			
Yes	0(0.0)	1(4.3)	1(2.9)
No	12(100)	22(95.7)	34(97.1)
Leukotrichia			
Yes	1(8.3)	2(8.7)	3(8.6)
No	11(91.7)	21(91.3)	32(91.4)
Classification of vitiligo			
Segmental	6(50.0)	10(43.5)	16(45.7)
Vulgaris	3(25.0)	3(13.0)	6(17.1)
Focal	0(0.0)	5(21.7)	5(14.3)
Acrofacial	2(16.7)	4(17.4)	6(17.1)
Acral	1(8.3)	1(4.3)	2(5.7)

Table 2 shows the socio-demographic distribution and vitiligo-related variable distribution of the adults. Amongst the adults, 40.8% were <30 years, 31.6% were aged 30 – 49 years and 27.8% were above 50 years at presentation. A family history of vitiligo was reported in 2.6% of cases. Re-pigmentation following treatment and history of spread of lesions was reported in 56.7% and 49.2% of adults respectively. The commonest area of onset was the face/scalp (56.6%). Symptoms of itching or sunburn were reported in 10.7% while 89.3% of adults were asymptomatic. Of the 76 cases, 7.9% were being treated for other medical conditions (hypertension in 83.3%). Using the "rule of nine" classification, severity of vitiligo was <9% in 86.5%, 10-18% in 9.5%, 19-27% in 1.4% and >28% in 2.8% of persons. Only 1 person reported a history of leukotrichia. Vitiligo was located on a visible/exposed part of the body in 82.9%. Of respondents, 89% presented with a duration of >1 year. The commonest type of vitiligo observed was acrofacial.

Table 2: Distribution of Variables In Adults

	Adult(≥18)		
Variable	Male (n=44)	Female (n=32)	Total (n=76)
Age at onset of vitiligo (years)**			
0 – 9	1(2.3)	1(3.1)	2(2.7)
10 – 19	5(11.6)	6(18.8)	11(14.7)
20 – 29	17(39.5)	8(25.0)	25(33.3)
30 – 39	5(11.6)	3(9.4)	8(10.7)
≥40	15(34.9)	14(43.8)	29(38.7)
Family history			
Yes	1(2.3)	1(3.1)	2(2.6)
No	43(97.7)	31(96.9)	74(97.4)
Area of onset			
Anterior trunk	3(6.8)	0(0.0)	3(3.9)
Buccal mucosa	0(0.0)	1(3.1)	1(1.3)
Face/scalp	28(63.6)	15(46.9)	43(56.6)
Genital	0(0.0)	1(3.1)	1(1.3)
Gluteal	0(0.0)	1(3.1)	1(1.3)
Lower limb	5(11.4)	6(18.8)	11(14.5)
Neck	1(2.3)	3(9.4)	4(5.3)
Not documented	6(13.7)	2(6.3)	8(10.5)
Upper limb	1(2.3)	3(9.4)	4(5.3)
Koebnerization**			
Yes	0(0.0)	3(9.4)	3(4.0)
No	43(100)	29(90.6)	72(96.0)
Leukotrichia			
Yes	1(2.3)	0(0.0)	1(1.3)
No	43(97.7)	32(100)	75(98.7)
Classification of vitiligo**			
Segmental	4(9.1)	4(12.9)	8(10.7)
Vulgaris	18(40.9)	5(16.1)	23(30.7)
Focal	4(9.1)	6(19.4)	10(13.3)
Acrofacial	17(38.6)	10(32.3)	27(36.0)
Acral	1(2.3)	4(12.9)	5(6.7)
Universal	0(0.0)	2(6.5)	2(2.7)

*Some figures are missing due to non-documentation of information, so only available figures were analyzed.**

The relationship between the adult-child group and variables is shown in table 3. Significant associations were found for gender, a history of spread and type of vitiligo. Significantly more females were found in the children group (41.8%) than in the adult group (42.1%). This had a statistical significance at P=0.021. At P=0.026, 68.5% of children compared with 31.5% of adults had a history of spreading. Segmental vitiligo was found in 45.7% of children 11.0% of adults, at P=0.001, this was significant. Acral/acrofacial vitiligo was found in 22.9% of children compared with 43.8% of adults. This attained significance at P=0.001.

Table 3: Summary of Differences Between Childhood and Adult Vitiligo

Variable	Age group		Total	Chi square	P value
	Children(≤17)	Adult(≥18)			
Gender					
Male	12(34.3)	44(57.9)	56	5.343	0.021
Female	23(65.7)	32(42.1)	55		
Family history					
Yes	1(2.9)	2(2.6)	3	0.005	1
No	34(97.1)	74(97.4)	108		
Re-pigmentation**					
Yes	14(82.4)	17(56.7)	31	3.189	0.074
No	3(17.6)	13(43.3)	16		
History of spread**					
Yes	24(72.7)	32(49.2)	56	4.934	0.026
No	9(27.3)	33(50.8)	42		
History of leukotrichia					
Yes	3(8.6)	1(1.3)	4	3.632	0.092
No	32(91.4)	75(98.7)	107		
Visibility					
No	4(11.4)	13(17.1)	17	0.595	0.440
Yes	31(88.6)	63(82.9)	94		
History of symptoms					
Symptomatic	0(0.0)	8(10.7)	8	4.026	0.053
Asymptomatic	35(100)	67(89.3)	102		
Classification**					
Segmental	16(45.7)	8(11.0)	24	17.494	0.001
Vulgaris	6(17.1)	23(31.5)	29		
Focal	5(14.3)	10(13.7)	15		
Acral/Acrofacial	8(22.9)	32(43.8)	40		
Severity**					
0 – 9	33(97.0)	64(86.5)	97	2.847	0.168
>9	1(3.0)	10(13.5)	11		

Some figures are missing due to non-documentation of information, so only available figures were analyzed.

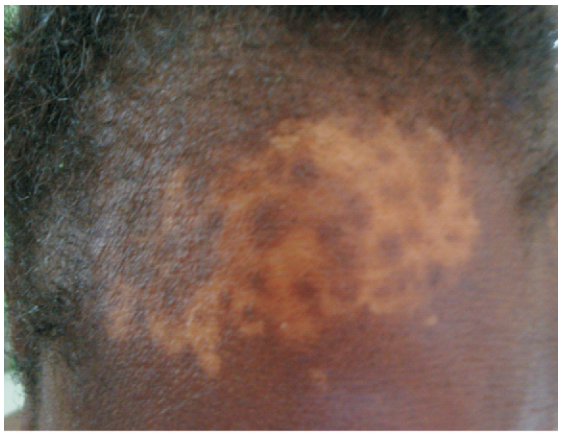

Figure 1: Vitiligo, repigmenting

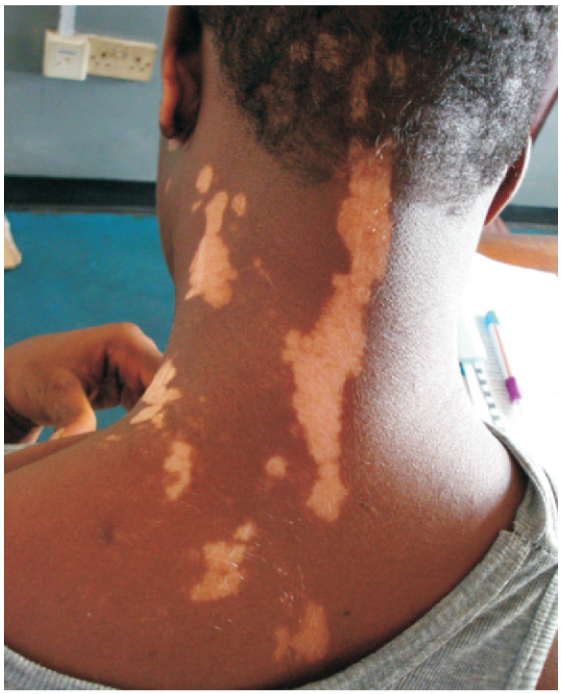

Figure 2: Segmental vitiligo

DISCUSSION

Studies comparing clinical characteristics between adult and childhood vitiligo are few, foreign and done a long time ago.[6,11,12,19,20] This study shows a preponderance of adult cases

of vitiligo. One of the theories for the pathogenesis of vitiligo is autoimmunity[6,21] and autoimmune diseases are said to occur more in adults.[6,8,20,23] It is hypothesized that this may be the reason for the preponderance of vitiligo in adults although in Nigeria, this hypothesis has not been tested. Studies by other authors on vitiligo reveal a similar preponderance of adult vitiligo patients.[7,11,20,22,24]

The children had more females having vitiligo while adults had more males. There may be a true gender difference in presentation of vitiligo between adults and children as other studies have also reported a female preponderance.[7,11,23] In contrast to this study, no gender differences in vitiligo was reported in children but, more females in adults in Korea and Brazil.[1,20] and more males in adults in Turkey.[6]

More children reported re-pigmentation following treatment in this study compared to adults though the difference was not statistically significant. This difference in rate of re-pigmentation may have been because, the children presented with more active lesions than the adults and also presented with a shorter duration of lesions than the adults. Also, the adults had more of acral (none hair bearing areas) vitiligo than the children where re-pigmentation is poor. Re-pigmentation though one of the goals of therapy in vitiligo is variable with some patients never re-pigmenting especially if the lesions are in non-hair bearing areas.[25] A study from Korea reported a similar better response of children to treatment compared to adults.[20] However, no difference in rate of re-pigmentation between adults and children was found by Solak et al and Mulekar et al.[6,9]

A significant number of children reported a history of spread of lesion compared to adults. This means that more children had active lesions and a short duration of lesions at the time of presentation. Vitiligo is said to be active or unstable when new lesions are still appearing or lesions are increasing in size.[26] The parents of these children may have been worried about the appearance and spread of these lesions, fear of stigmatization hence the presentation when lesions were still active. De Barros et al reported as in this study more history of spread of lesions in children.[1] However, Solak et al and Nicolaidou et al reported more spread of lesions in adults compared to children[6,16] The reason for this difference in report of disease activity is not known.

There was no significant difference in history of leukotrichia although more children had leukotrichia compared to adults. In India, Agarwal et al had a similar report as in this study[7] but Solak et al reported more leukotrichia in children.[6]

Koebner's phenomenon which is the appearance of lesions in area of trauma[27,28] was not significantly different in this study. Reports of difference in koebner's phenomenon varies in different studies of vitiligo with some reporting it to be more in adults[1,22,29] others more in children[6] and others no difference.[7]

There was a marked significant difference in classification of vitiligo with children having more segmental vitiligo than adults. Significantly more segmental vitiligo in children has been documented in India,[11] Brazil[1] Greece[16] and Korea[20] with a consequent thinking that childhood vitiligo is a distinct form of vitiligo from the adult

form.[11,20]

The commonest site of onset in both groups was the face and scalp. Other studies report similar area of onset.[1,6,9,20] Only children had an area of onset in the vulva. This was significantly different from what was seen in the adults. Other studies on differences between adult and childhood vitiligo have not specifically noted this difference of vulvar onset.[1,6,16]

There was no difference in the family history of vitiligo in this study. Family history of vitiligo is variable as it is not a heritable disease but more likely in consanguineous marriages.[11,16,22,30] In other studies, family history of vitiligo was not found to differ as in this study.[11,22] Only three patients out of 111 reported a family history of vitiligo in this study, these are too few to make categorical statements about a significant difference in family history between adults and children. In Korea and Greece, a significant difference in family history of vitiligo was found with children having more family history than adults,[16,20] while in India family history of vitiligo was not statistically significant.[20]

All the children in this study had asymptomatic lesions and only a few adults had symptoms and this difference was significant. Other studies on differences did not document this and so comparison could not be made.[6,7,16]

CONCLUSION

In conclusion, this study shows as in similar studies that, childhood vitiligo differs from adult vitiligo. There was a difference with respect to gender, segmental vitiligo, re-pigmentation, symptomatology and instability of lesions.Also, only children had the vulva as the area of onset of vitiligo.

LIMITATION TO THE STUDY

The number of patients were few making comparison of some variables difficult.

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