
Clinical and Hematological Study of Pityriasis Alba among Patients Attending Al-Yarmouk Teaching Hospital

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Abstract

Background: Pityriasis Alba is a type of non-specific dermatitis of unknown origin where characteristically produce erythematous scaly patches which subsides to leave areas of hypopigmentation.

Objective: The aim of work is to study the clinical and hematological pattern of Pityriasis Alba in Iraq.

Patients & Methods: This case control study was done in the Department of Dermatology and Venereology, Al-Yarmouk Teaching Hospital, during the period from 1st Dec. 2006 through 1st May 2007. A detailed hematological study done in 66 patients of Pityriasis Alba and the result was compared with 66 age & sex matched controls.

Results: Eighty patients with Pityriasis Alba enrolled in this study. They were 68 males & 12 females with male: female ratio of 5.6:1. Their ages ranged from 1-17 years with mean $\pm$ SD of 8 ± 2 years. Recurrent cases were found in 25% of cases, 17.5% of cases were found to have personal history of atopy. A positive family history of same illness was found in 31.2% of cases. Hypopigmented lesion was found in 75% of patients and erythematous lesion found in 25% of patients, scaling was present in 68.75% of patients, itching was present in 37.5%, the site of lesion was facial in 87.5%, and the number of lesions was multiple in 97.5%, worm infestation was found in 6.25%. Hematological study revealed a significant a higher mean level of eosinophila among Pityriasis Alba patients in comparism with control group, There is also significant decrease in mean of hemoglobin level & PCV % in Pityriasis Alba patients in comparism with control group. In addition, there was a significant decrease in the mean level of serum iron and significant increase in the mean level of TIBC in Pityriasis Alba patients in comparism with control group.

Conclusion: This result suggest iron deficiency anemia in studied group. Also, a significant a higher means level of eosinophila among Pityriasis Alba patients in comparism with control group.

Key words; Pityriasis Alba, Haematological study

Introduction:

Pityriasis Alba (PA) is a type of non-specific dermatitis of unknown origin where characteristically produce erythematous scaly patches which subsides to leave areas of hypopigmentation^[1].

Pityriasis Alba occurs predominantly in children between the age of 3 and 16 years, in this age group the incidence may reach 30-40%. The conditions appear on most instances before puberty. The sexes are equally affected^[1, 2, 3]. PA is more common in preadolescent children with an equal incidence in boys and girls. It is the most common disorder of hypopigmentation in children^[4].

In an uncommon clinical variant the lesion are widespread and distributed symmetrically and referred to as extensive pityriasis Alba^[5].

The supposed increased incidence in spring and summer months may be due to increased contrasting tanning occurring at that time^[6, 7].

Pityriasis Alba has been regarded as a manifestation tendency to depigmentation which is commonly expressed by individuals possessing other characteristics of the atopic state^[8], but other have the believe that PA occurs more frequently in atopic patient but the diseases is not certainly confined to atopic patient^[9].

Effort to isolate an infection agent bacterial, viral or fungal has been unsuccessful^[3]. It has been suggested that PA might be a variant of seborrheic dermatitis^[7].

The individual lesion is a rounded, oval or irregular plaque red pink of skin coloured with fine lamellar or brany adherent scaling^[6]. The patches are usually multiple, there may be 4 or 5 or 20 or more, in size they usually range from 0.5 to 2cm in diameter but may be large especially on trunk. As a rule PA is asymptomatic, however there may be mild purities^[1, 10, 11].

The skin lesion were found to occur most frequently in the face & arm followed by the legs and the trunk. In children the lesion are often confined to the face and are commonest around the mouth. Chin and cheeks^[1].

A previous hematological study of PA in 1993 done by Bassaly & Maile showed unremarkable difference between the patient and the control group but detail hematological evaluation was not done. Also serum iron and total protein did not differ from normal^[12].

Another study done in Egypt (2002) done by Somia showed that the profile for leukocyte & erythrocyte cell variable was not significantly different between PA patients & control group. Also this study revealed no evidence of hypochromic anemia and under nutrition in PA patients^[13].

Many diseases are associated with eosinophila and many of these involve cutaneous eruption. In a patient who has personal or family history of respiratory a topy it is elevated^[14].

The aim of work is to study the clinical and haematological pattern of Pityriasis Alba in Iraq.

Patients & Methods:

In this case control study, the patients with Pityriasis Alba was collected from out patient clinic of dermatological and venereal diseases of Al-Yarmouk Teaching Hospital during the period of five months from 1st of December 2006 to 1st of May 2007.

A diagnosis of the disease is based on the clinical picture only (The age incidence, the fine scaling and the distribution of the lesion usually suggest the diagnosis), and a special questionnaire was filled which include age, sex, duration of the disease, season in which the disease started, recurrence of illness, family history of same illness, personal history of atopy, itching, any history of recent infection, and history of worm infestation.

Through clinical examination of the patients was done to assess the nature of the lesions, their site, their number, the colour of the lesion, and associated scaling. In addition, other feature of atopy was looked for.

A detail hematological profile (hemoglobin, packed cell volume (PCV), erythrocyte count,

total leukocyte count, neutrophil count, lymphocyte count, eosinophil count) was done on each patient excluding patients with personal history of atopy, patients with recent infection or with history of worm infestation confirmed by general stool examination (GSE), and who were on topical or systemic steroid therapy. Also, biochemical assay was done for serum iron (Fe), total iron binding capacity (TIBC), total serum protein (TSP). The hematological and biochemical results of patients with Pityriasis Alba were compared with age and sex matched healthy controls using t-test and P-value <0.05 was considered significant.

Results:

A total of 80 patients with Pityriasis Alba were collected during the study period, their age ranged between 1-17 years with a mean $\pm$ SD of 8 ± 2 years there was 68 males (85%) and 12 females (15%) with male: Female ratio of 5.6:1. The age of males ranged from 3-15 years with a mean age 8.25 years while the age of the females ranged from 1-17 years with a mean age 9.5 years (Table 1).

Table 1: Shows age & sex distribution of studied patients

Age	No	%	Male	%	Female	%
<6	24	30	20	25	4	5
6-10	37	46.3	35	43.8	2	2.5
11-15	16	20	12	15	4	5
16-17	3	3.7	1	1.3	2	2.5
Total	80	100	68	85	12	15

The duration of disease was ranged from one week to one year with a mean duration of 4.6 months. Mild to moderate itching was seen in 30 patients (37.5 %). The number of patients with history of recurrent illness was found in 20 patients (25%). A positive family history of same illness was found in only 25 patients (31.2%). The study showed that 40 patient (50%) have had

their illness started in winter, 30 patient (37.5%) in summer, five patients (6.25%) in spring, five patients (6.25%) in autumn (Table 2).

In Addition, The number of patients presented with personal history of atopy was 14 patient (17.5%) 11 male (13.75%) and three females (3.75%), (Table 3).

Table 2: Shows seasonal variation in Pityriasis Alba (Regarding onset of the disease)

Season	Number of Pt.	%
Winter	40	50
Spring	5	6.25
Autumn	5	6.25
Summer	30	37.5

Table 3: Shows Pityriasis Alba patient's distribution according to presence and absence of atopy .

	NO	%	M	%	F	%
ATOPY	14	17.5	11	13.75	3	3.75
NON.ATOPY	66	82.5	57	71.25	9	11.25

Regarding clinical infestation, patient presented with history of worm infestation confirmed by GSE was found in five patients (6.25%). Also no history of recent infection associated with patients having PA was demonstrated.

Concerning the clinical feature, the followings were found;

*Hypopigmented lesion was present in 60 patients (75%) and Erythematous lesion was present in 20 patients (25%) of patient.

*Scaling was present in 55 patients (68.75%).

*The site of lesion was facial in 70 patients (87.5%) non-facial in 5 patients (6.25%) mixed in 5 patients (6.25%) (Table 4).

*The number of lesion was multiple in 78 patients (97.5%) while single in 2 patients (2.5%) (Table 5).

Table 4: Shows the site of involvement in patients with PA

Site of involvement	No. Of Pt.	%
Facial	70	87.5
Non-facial	5	6.25
Both site	5	6.25

Table 5: Shows the number of lesion in patients with PA

No. of lesion	No. of Pt.	%
Single	2	2.5
Multiple	78	97.5

Table 6 summarized the hematological findings which were;

*The mean leukocyte and erythrocyte cell were not significantly different from control group, $P=0.757$ and 0.168 respectively.

*The mean eosinophil count in patients Pityriasis Alba was 8.58 ± 3.3 which was significantly higher ($P=0.000001$) than control group (3.48 ± 2.4).

*The mean of neutrophil count in PA patients was 58.67 ± 15.70 which was not significantly different from mean of neutrophil count in controls (66.6 ± 12.83) ($P=0.213$). Also, the mean of lymphocyte count in PA patients (32.5 ± 14.07) was not significantly different from mean lymphocyte of controls (29.6 ± 11.5) ($P=0.613$).

*The mean level of hemoglobin in patients (12.53 ± 1.22 gm/dl) was significantly less than

that of controls (14.21 ± 1.74 gm/dl), $P=0.000003$. Moreover, the mean of packed cell volume (PCV) of patients ($39.33 \pm 4.63\%$) was significantly less than mean of PCV of control group ($47.53 \pm 9.98\%$), $P=0.000003$.

*The mean level of serum iron of patients (69.4 ± 19.71 mg/dl) was significantly less than mean of serum iron of control group (76.63 ± 15.87), $P=0.045$.

*The mean level of total iron binding capacity (TIBC) of patients (299.51 ± 37.90 mg/dl) was significantly more than mean TIBC of control group (286.9 ± 27.94 mg/dl), $P=0.039$.

*The mean level of total serum protein (TSP) of patients (6.94 ± 0.54 gm/dl) was not significantly different from control group (7.16 ± 0.73 gm/dl), $P=0.069$.

Table 6: Blood profile in patients with Pityriasis Alba compared to the control group.

	Blood variable	P. alba (n=66) X±SD (Range)	Controls (n=66) X±SD (Range)	t test P value	significance
1	WBC count	6.75 ± 1.19 (4-12)	6.86± 1.35 (4-8)	t=0.307 P=0.757	NS
2	RBC count	5.16±5.3 (4-4.5)	5.36 ± 5.7 (4-6.5)	t=1.38 P=0.168	NS
3	Eosinophil Count%	8.58±3.3 (1-17)	3.48±2.04 (1-10)	t=8.942 P=0.000001	S
4	Neutrophil Count	58.67± 15.7 (27-80)	66.6±12.83 (42-81)	t=1.279 P=0.213	NS
5	Lymphocyte (L)count	23.2±14.07 (15-59)	29.6±11.5 (14-52)	t=0.522 P=0.613	NS
6	Hemoglobin gm/dl	12.53±1.22] (9.2-15.6)	14.21±1.74 (9.5-16.5)	t=6.128 P=0.000003	S
7	PCV%	39.33±19.71 (31-55)	47.53±9.98 (30-95)	t=6.164 P=0.000003	S
8	Serum iron µg/dl	69.46±1971 (20-95)	76.63±15.87 (35-95)	t=1.997 P=0.045	S
9	TIBC µg/dl	299.51±37.90 (245-390)	286.93±27.94 (284-380)	t=2.704 P=0.039	S
10	TSP gm/dl	6.94±0.54 (6.8.5)	7.16±0.73 (6-85)	t=1.813 P=0.069	NS

Discussions:

Pityriasis Alba is type of non-specific dermatitis of unknown origin that contribute to the most common cause of hypopigmentation in children [1,4]. This study has also confirmed this observation as it is found that the mean age of patients was 8.43 years with range of 1-17 years. It is often reported that Pityriasis Alba is a disease of both sexes with equal male to female ratio [1,2,3] but in the present study Pityriasis Alba was founded more commonly in males (85%) than females (15%) with sex ratio 5.6:1. This may be due to frequent exposure of boy to sun & out door activity in our country.

Regarding seasonal variation, Pityriasis Alba supposed to have an increases incidence in spring and summer due to increases tanning in these seasons [6, 7]. The current study found that 50% of cases occur in winter while 37.5% occur in summer. This may be probably due to the fact that bulks of this study were done in winter season.

Pityriasis alba has been regarded as a manifestation of Atopic dermatitis but the figures suggest that is certainly not confined to Atopy [9]. This study showed that atopic patients constitute only 17.5% (14 out of 80) of Pityriasis Alba patients while non-atopic patients constitute

82.5% (66 out of 80) and this go with above statement.

It is often reported that recurrent crops of new lesion of PA may occur at interval [1]. This study also showed that the recurrence of same illness was found 25% of patients. Itching was found only in 37.5% of patients in our study, while other studies stated that most PA patients are asymptomatic however there may be mild purities [3].

Worm infestation was found in 6.5% of patients. This may be coincidental with PA and not related to the etiological factor. No history of recent infection was associated with PA patients, this ruled out an old theory which stated that PA may be due to bacteria, fungal or viral infection [8].

Regarding colour of individual lesions it is often reported that hypopigmented lesion common presentation which commonly induce patient to seek advice [1]. In our study, hypopigmented lesion was presented in 75% of patients while erythmatous lesion was present in 25% which goes with above observation.

Regarding the site of lesion, it is reported that in children the lesion confined to face and are commonest around mouth, chin and cheek [1]. This study also confirms this observation as it

was found that 87.5% of lesions were on the face.

Concerning the number of lesions, it is often reported that lesions of PA are usually multiple^[1]. This study also confirms this observation as it is found that 97.5% of patients have multiple lesions.

In the present study we found that there was no significant difference in the mean of leukocytes and erythrocytes in PA patients in comparison with the control group, which is in accordance with the work of Bassly and Mail^[12] & the study of Somia^[13]. There is a significant higher level of mean eosinophil count in PA patients in comparison with the control group. So PA is similar to Atopic dermatitis in association with blood eosinophilia and this goes with other studies that said PA might be a minor criterion of Atopic dermatitis^[2,14].

There is no significant difference between the mean level of neutrophils count in PA and control group. So the absence of neutrophilia in PA rules out the old hypothesis which said that PA being related to septic focus of infection since in this condition change in neutrophil count are expected.

The mean of HB level & PCV% of PA patients was significantly less than control group. These results suggest that anemia may be associated with PA & this result differ from the work of Bassly and Mail^[12] & from study of Somia^[13] on which they reported that there is no difference in HB and PCV between PA and controls.

Iron deficiency anemia was confirmed by decreased serum iron level and increased TIBC which is significantly differ from control group. This is in contrast with other studies^[12, 13] in which they have showed no difference between PA patients and controls regarding serum iron and TIBC level. This result may be explained in that this age group^[1-17] year is vulnerable to under nutrition and anemia especially in our country because of bad circumstances in our country, so it is coincidental with PA patients and not etiological factor.

In conclusion, this study showed that PA was common hypopigmented disorder among children and young adolescent age rang between 1-17 years. It was most common in boys than girls with ratio of 5.1:1. There was peripheral blood eosinophilia among studied PA patients in comparison with control group. Moreover, there was iron deficiency anemia among patients in comparison with control group.

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