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Studies on Pityriasis Versicolor in Egypt

I. Incidence

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Pityriasis versicolor (P. V.) is of world-wide distribution, but is particularly common in tropical and subtropical countries. As many as 50 % of the population in certain regions of Central and South America as well as parts of Africa, Samoa and India are affected (LE JEUNE, 1951; VANBREUSEGHEM, 1950; MARPLES, 1965 and LAHIRI et al., 1957). The disease is very common in Cuba (ALFONSO-ARMENTEROS, 1953). In temperate countries, the incidence of the disease is much lower. ADAMSON (1949) reported it as being 0.5 to 1 % in all skin diseases in England. Among patients with proven cutaneous fungus infection, surveys have indicated that P. V. constituted only 2.0 % to 8.4 % (FISCHER and WRONG, 1952; BURKE and BUMGARNER, 1949, and STEIN, 1951).

The present work has been undertaken to determine the prevalence of P. V. in our country, and the possible predisposing factors.

Material and Methods

In this study, the records of University students attending the Dermatology out-patient clinic of Ain Shams University in the years 1964—1969 were analysed. These comprised 14187 patients with skin diseases (11734 males and 2453 females). Further 3518 persons representing different age, sex and occupation were also examined. These were as follows:

	Males	Females
1. Ideal Factory	396	22
2. Armed Forces	171	—
3. Primary school	200	102
4. Secondary school	1170	—
5. Nurses	—	312
6. Rheumatic Heart Patients	49	68
7. Tuberculous patients	100	100
8. Dermatology out-patients	462	566

In the whole study, the age incidence and sex ratio were calculated. Particular attention was also given to the nature of occupation.

Two hundred positive cases were asked for complete history regarding age, sex, occupation, marital status, family history, conjugal cases, pregnancy, medical or surgical diseases, other skin diseases, seasonal onset, first site affected, treatment, etc.

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Results

In the years 1964—1969, a number of 14187 University students attended the dermatology out-patients clinic because of various skin diseases. Out of them 929 patients (6.5%) were found to have lesions of P. V. (Table I).

Table I: Number and Percentage of P. V. Cases Among University Students Attending the Dermatology Out-patient Clinic in 1964—1969

Year	No. of Skin Diseased patients	No. of P. V. patients	Percentage
1964	1 729	99	5.6
1965	2 974	157	5.2
1966	3 768	315	8.3
1967	1 392	93	6.6
1968	2 639	143	5.4
1969	1 685	122	7.1
Total	14 187	929	6.5

During these 6 years, the percentage of infection varied from 5.2 to 8.3% but did not show a regular increase or decrease. It is also clear from Fig. 1 that affection was more common in males than in females.

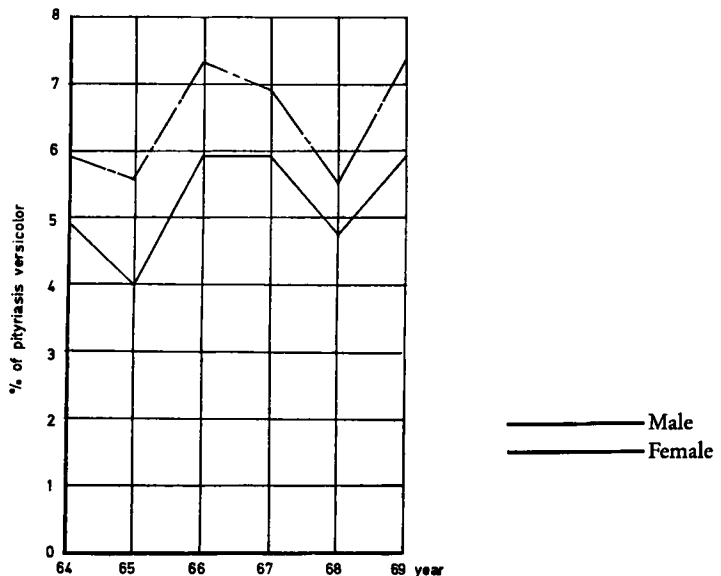


Fig. 1: Pityriasis versicolor in university students attending the Dermatology out-patient clinic in 1964—1969

As seen in Table II, soldiers presented the highest percentage of infection (16.3%). In nurses, only 3 out of 312 persons were affected (0.9%). Rheumatic patients (mostly 5 to 10 years old) were completely negative and tuberculous patients showed a percentage of 6.5 of P. V. cases.

Table II: Incidence of P. V. Among Persons of Different Occupations

	No. of examined persons	No. of P. V. persons	Percentage
Workers	418	23	5.5
Soldiers	171	29	16.3
Students:			
a) primary school	302	—	—
b) secondary school	1 170	63	5.4
Nurses	312	3	0.9
Dermatology out-patients	1 028	63	6.1
Rheumatic heart patients	117	—	—
Tuberculous patients	200	13	6.5
Total	3 718	194	5.2

The importance of the type of work seems to lie mainly in its effect on the production of excessive sweating. Taking Ideal Factory as an example (Table III), we found that comparison of Group B with the remaining groups in the factory, gave rise to a statistically significant figure (3.897), the limiting value is 3.841. Comparing the various groups with each other, the only statistically significant figure (7.388) was obtained between group B and group D. The latter group comprised copper workers, who sweat extensively because of the high temperatures they are exposed to during their work time. Also comparing group D with the whole factory, the difference was found to be statistically highly significant.

Table III: Incidence of P. V. in Ideal Factory

Type of Work	No. of persons examined	No. of P. V.	Percentage
A) Painting	47	2	4.2
B) Office	110	2	1.8
C) Carpentry	139	10	7.1
D) Copper work	57	7	12.2
E) Kitchen work	22	2	9.0
F) Leather work	43	—	—
Total	418	23	5.5

The youngest male patient seen in this survey was a boy of 11 years old, giving a history of 6 months duration of the same lesions. The youngest female patient was a girl of 12 years old; she gave a positive history of the skin condition on the chest and back of 5 years duration. The commonest age group affected was 25—30 years in males, and 20—25 years in females (Table IV).

Table IV: Age Incidence of P. V.

	Age in years	
	Male	Female
Youngest patients	11	12
Oldest patients	61	46
The common age group affected	25—30	20—25

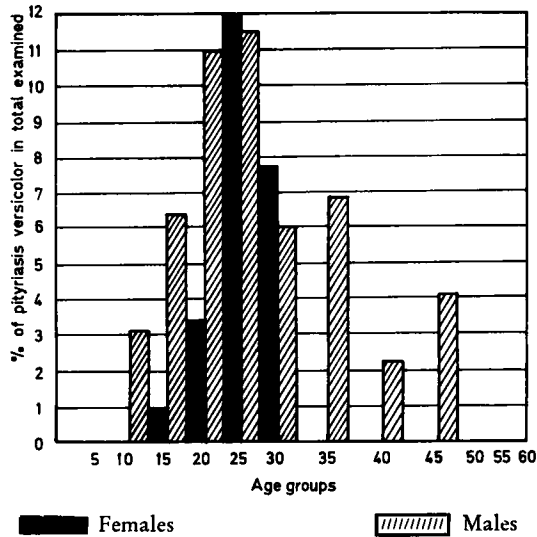


Fig. 2: Percentage of pityriasis versicolor in different sexes and age groups

In 50 cases there was positive family history of P. V. affection (Table V). Eleven patients were either father or mother, who were first affected in the family. The disease appeared then on the skin of their children. However, in most cases the parents were cured before birth of child.

Table V: Positive Family History of P. V.

No. of Patients	1st Case	2nd Case	Time Interval
11	Father or Mother	Son or Daughter	In most cases the parents were cured before birth of child
30	Brother	Brother or Sister	From 2 weeks up to 5 years
7	Sister	Sister or brother	3 months — 3 years
3	Cousins	Cousins	not known

Thirty brothers contracted the disease at first and introduced it in their families, then lesions began to appear on their brothers, and sisters after 2 weeks to 5 years. Nine sisters were first affected, then the disease appeared mostly on their sisters and also their brothers after a period of 3 months to 3 years.

Twenty males were married; only 2 gave positive history of affection in wife. Of the 35 married women, 3 gave positive history of affection in husband. Table VI lists these 5 cases and shows time interval. In all 5 cases the second case occurred while the first was still active.

Table VI: P. V. In Married Couples

First Case	Second Case	Positive History Before Marriage	Time Interval Between Affection of 1st & 2nd Case
Husband	Wife *	No	2 years
Husband *	Wife	No	3 months
Husband	Wife *	No	3 months
Husband	Wife *	Yes +	18 months
Husband *	Wife	Yes +	3 months

* Patient Examined

+ Husband

Of the 200 P. V. patients, only 35 gave a history of either internal diseases as asthmatic bronchitis, tuberculosis, renal diseases or operations, as appendectomy and tonsillectomy. However, no single patient noticed any change in P. V. lesions during the medical disease or after operation.

Two females were pregnant when examined. They came back after delivery with the same lesions. Another two patients gave a history of first appearance of P. V. lesions during pregnancy. In one case, the lesions started at the 5th month and the 2nd case at the 7th month of pregnancy. Both of them did not notice any change in lesions after delivery.

Discussion

EL-ZAWAHRY (1963) examining patients with variable dermatoses found 70 out of 2000 patients to have P. V., i. e. 3.5%. In our study, the incidence of P. V. among dermatology out-patients was higher, 6.1%. However, this figure is low compared with the incidence of P. V. in tropical climates, which was found to be as high as 50% of the population in Central and South America, as well as parts of Africa (LE JEUNE, 1951, VANBREUGHEM, 1950); Samoa (MARPLES, 1965), and India (LAHIRI et al. 1957).

As regard the sex ratio of P. V., males and females according to most authors are about equally affected (LEWIS et al. 1958, EL-ZAWAHRY, 1963, HILDICK-SMITH et al. 1964, and BEARE et al. 1968). ROBERTS, studying 87 patients found sex ratio to be 3 : 2 males to females. In our study, the sex ratio was found to be 1.8 : 1 males to females. This difference is statistically highly significant.

Pityriasis versicolor is known to affect mainly young adults (BURKE, 1961, WILSON and PLUNKETT, 1965 and BEARE et al. 1968); but it may occur in children and in the aged. In this study, the youngest male patient seen was 11 years old, having the skin condition for six months. The youngest female patient was 12 years old, giving a history of five

years duration of the skin condition. Examining 453 children under ten years of age, none was found to be affected. MICHALOWSKI and RODZIEWICZ (1963), examining 305 children in Poland, reported an incidence of 10.8 %. Two of the cases observed by them were under one year of age; a girl of 11 months and 12 months old boy. MARPLES (1950) reported two cases (one male and one female) under six months of age in Western Samoa. But the youngest case of P. V. reported was that of SMITH et al. (1966) in an 8-weeks old male infant. The oldest male seen in our study was 61 years old. The oldest female was 46 years old. Both were medically and surgically free. ROBERTS (1969) reported that the oldest male and female in his study were 45 and 43 years respectively. The same author also reported another case, a 61 years old male patient who had a serious disease in addition to P. V.

The observation that infection is particularly prevalent in those who perspire profusely and neglect personal cleanliness is open to discussion. Thirteen females (6.5 %) and 16 males (8 %) out of the 200 cases studied were found to perspire profusely. Thirty-eight males (19 %) and 7 females (3.5 %) in the same series were engaged in hobbies that provoke sweating, while in 2 of the affected male patients, the tendency to sweat was less than normal. In the statistical analysis of the results obtained from the Ideal Factory (Table III), the only statistically significant results obtained when copper workers were compared with other employees in the same factory. This indicates that continuous excessive sweating during working hours may play a role in predisposition to this disease.

Malnutrition, avitaminosis, tuberculosis and other ailments as well as operative interference were not found to be evident predisposing factors. Seven patients (3.5 %) suffered from a medical disease, and 9 showed evidence of malnutrition. Examination of 200 tuberculous patients revealed an incidence of 6.5 %. On the other hand, no single case of P. V. could be detected in 117 cases with severe rheumatic heart affection.

The association of P. V. with pregnancy was frequently mentioned (BURKE, 1961, ROBERTS, 1969). In our studies of 200 positive cases, there were 35 married women. Two of them noticed the first appearance of their rash during pregnancy, two others were pregnant when examined. The disease did not disappear spontaneously at term in any of these women.

The seasonal variation of P. V. is frequently mentioned. It is reported to be more in the warm months of the year (SAMS, 1951; ROBINSON and YAFFI, 1956, and ROBERTS, 1969). This is also evident in the present study, as 139 patients out of the 200 (69.5 %) noticed the first appearance of the lesion during the period from April to June: again, it was noticed that the spread of already existing lesions of P. V. did take place in these warm months too.

There is some evidence that susceptibility in P. V. might be genetically determined. It was observed that more than one sibling in a family (Table V) can contract the infection (50 cases were recorded, i. e. 25 %), while in spite of the long intimate contact (up to 25 years) between the parents, yet the infection was found to be restricted to one of them (5 of the 55 examined married patients, i. e. 9.1 %). Of 29 married patients examined by BURKE, (1961), 17 % reported familial incidence but none reported infection in their conjugal mates. ROBERTS (1969) reported 3 conjugal cases among 41 married subjects and reported a positive family history of P. V. in 5 out of 85 patients.

Summary

This work was undertaken to establish the prevalence of pityriasis versicolor in Egypt through wide survey of different groups of people, of different occupations and belonging to different age groups.

Statistical analysis of 14187 cases from the records of University students attending the Dermatology out-patient clinic of Ain Shams University, during the period 1964—1969 was carried out.

A total of 3518 persons, school children, factory workers, employees and other sections of the population were examined clinically for any evidence of pityriasis versicolor.

The incidence of pityriasis versicolor in the whole survey was found to be 5.1 %. There was a definite statistically significant difference in sex incidence, 1.8 : 1 male to female. The commonest age of affection in males was found to be 25—30 years, meanwhile, this was 20—25 years in females. The incidence of pityriasis versicolor among other skin diseases was found to be 6.1 %.

Persons working under high temperatures that lead to excessive sweating, were found to be more predisposed to the disease. Tuberculous subjects were found to be more susceptible to the disease as evidenced by the high incidence of pityriasis versicolor among them (6.5 %). A genetic factor was found to play a role in predisposition to pityriasis versicolor since the affection was found to be 25 % among parents and their siblings, meanwhile it was 9.1 % among conjugate cases.

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