

VITILIGO : AGE-GROUP RELATED TRIGGER FACTORS AND MORPHOLOGICAL VARIANTS

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Introduction

Vitiligo is a fascinating pigmentary aberration that has puzzled the investigators the world over. What exactly precipitates this depigmentation of integument is still speculative. Till date, either single causative factor(s) or genetic abnormality has given a reliable explanation for its pathogenesis. Thus, it is generally believed to be the net outplay of several endogenous and exogenous factors in a relatively susceptible individual.¹ In recent times, it is affecting younger generation with an increasing incidence! Congenital as well as infantile forms of vitiligo are its living testimony.^{2,3} However, the occurrence of vitiligo in younger children, if investigated, may offer a more clear understanding of its pathogenesis. Its short duration and limited history can point to the triggering event more clearly. The present paper highlights these astute observation of a thorough 1-year study of 1000 successive fresh vitiligo patients. Certain important facts came to light after the analysis of the data, which form the subject matter of this paper.

Materials and Methods

The study was conducted on one thousand successive vitiligo patients reporting to our outpatients'. Of these, 503 were males and 487 females. The duration of the disease varied from three weeks to over 8 years. All endeavours were made to include only those

patients that did not take any form of vitiligo therapy-Allopathy, Homeopathy, Unani or Ayurvedic. After the diagnosis was unequivocally established in each case, they were subjected to a detailed history to find out any significant triggering event preceding its onset. The repetition of triggers, if any, was correlated with the clinical activity of the disease. Pityriasis alba, pityriasis versicolor, macular leprosy, seborrhoeic diathesis, lesihmaniasis, post-inflammatory hypopigmentation were all excluded after relevant assessment and investigation. After a thorough clinical examination, they were subsequently grouped according to criteria of Behl⁴ into active progressive (V1), stationary (V2) and repigmentory (V3) stages. Meticulous details were written on a specially-devised, exhaustive proforma. The results were computed after tabulating findings on a master chart. The statistical evaluation was done using Student t-test, in relation to age groups, stages/types of vitiligo, and triggering events. Based on our findings, the conclusions were derived.

Results

Of all patients included in the study, 503 (50.3%) were males and 497 (49.7%) were females. In the age group 0-10 years, there were 194 children, thus giving an incidence of 19.4% in this age group. Their further break up in types and stage of vitiligo is shown in Table 1. In the age group 11-20 years, there were 260 patients, (incidence 26.0%). Their breakup in type and stage of vitiligo is given in Table II. In the age group 21-30 years, 233 patients (incidence, 23.3%) were recorded

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Table I. Stages of Vitiligo Vs Morphological Variants in the Age Group 0-10 years (Total cases 194).

Abbreviations used : V1-Active, Progressive; V2-Stationary; V3-Repigmenting; A-Acral; V-Vulgaris; M-Mucosal; F-Facialis; Z-Zosteriformis; AF-Acrofacialis.

Stage of Vitiligo	Total No. of Patients	Morphological Variants of Vitiligo					
		A	V	M	F	Z	AF
V1	151	23	92	1	17	12	6
V2	32	11	14	1	2	3	1
V3	11	4	3	-	1	3	-

Table II. Stages of Vitiligo Vs Morphological Variants in the Age Group 10-20 years (Total cases 260).

Stage of Vitiligo	Total No. of Patients	Morphological Variants of Vitiligo					
		A	V	M	F	Z	AF
V1	160	32	81	4	16	13	14
V2	66	7	43	2	7	3	4
V3	34	9	16	4	1	1	3

Table III. Stages of Vitiligo Vs Morphological Variants in the Age Group 20-30 years (Total cases 233).

Stage of Vitiligo	Total No. of Patients	Morphological Variants of Vitiligo					
		A	V	M	F	Z	AF
V1	173	31	111	6	13	2	10
V2	39	8	25	-	3	2	1
V3	21	7	10	1	2	-	1

Table IV. Stages of Vitiligo Vs Morphological Variants in the Age Group 30-40 years (Total cases 159).

Stage of Vitiligo	Total No. of Patients	Morphological Variants of Vitiligo					
		A	V	M	F	Z	AF
V1	114	24	67	5	6	7	5
V2	34	5	18	1	3	-	7
V3	11	4	5	-	-	2	-

(table III). Age group 31-40 years had 159 patients (incidence 15.9%), and in above 40 years age group there were 154 (incidence 15.4%) patients (Table IV & V).

The triggering factors in relation of different age groups have been summarised in

Table VI. The genetic background of patient was identifiable in several patients (Table VII).

Discussion

Much has been said about the biochemical, cellular and molecular aetiopathogenesis of vitiligo.^{2,4} Despite

Table V. Stages of Vitiligo Vs Morphological Variants in the Age Group >40 years (Total cases 154).

Stage of Vitiligo	Total No. of Patients	Morphological Variants of Vitiligo					
		A	V	M	F	Z	AF
V1	116	27	64	2	9	2	12
V2	33	6	21	2	2	-	2
V3	5	-	5	-	-	-	-

Table VI. Identifiable Trigger Factors.

Trigger Factors	Age of Onset (years)				
	0-10	10-20	20-30	30-40	>40
Digestive Upsets/Preserved food intake	85	99	128	61	77
Malnutrition	98	48	27	18	20
Repeated Medication	21	48	42	53	69
Recurrent Infections	82	74	67	46	38
Allergies	17	22	36	27	28
Endocrine Factors	1	3	2	7	21
Ecology (Drinking/Irrigation water)	27	23	37	28	22
Addictions (Alcohol, Smoking, Pan Masala)	-	7	41	38	50
Stress/Strain	4	75	146	97	93

Total Patients = 1000

Table VII. Genetic Predisposition of Vitiligo.

Relative (s)	Age Groups (years)				
	0-10	10-20	20-30	30-40	>40
Vitiligo in one close relative	30	37	41	23	25
Vitiligo in more than one close relative	20	18	17	8	12

intricate biochemical tests, elaborate animal experiments, culture of melanocytes, and ultra-microscopic studies, nothing concrete is emerging about the exact aetiology of this disfiguring depigmentation. However, the much revealing, triggering events have got scant attention. Thus the details of a meticulous history, clinical classification and demonstration of trigger factors can always prove rewarding, for it can certainly help in the practical management of the patient. The probable triggering mechanisms that resulted in vitiligo has to be eliminated for effective eradication of the disease. Several such crucial features came to light in the present studies

that further strengthen our suspicion regarding its aetiopathogenesis.

The male : female ratio in vitiligo was observed to be nearly equal, meaning thereby that this disease has no prediction for any sex. Further the incidence of 45.4% in 0-20 years of age as compared to a low incidence of only 15.4% in individuals over 40 years of age (Fig.1) means more and more younger people are getting afflicted with this disorders. Young children are more vulnerable to recurrent infections, bowels upsets, and thus are exposed to toxic, strong medication for the same. The same generation is taking more of fast, ready food that has an alarmingly high

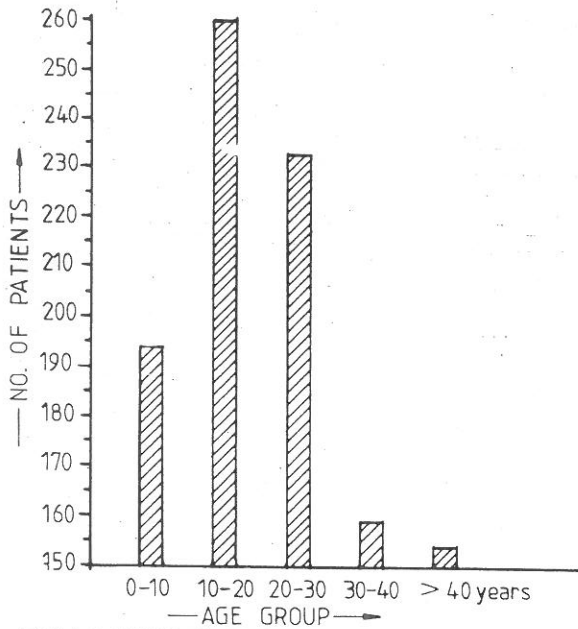


FIG. 1 : CORRELATION OF NUMBER OF PATIENTS OF VITILIGO WITH DIFFERENT AGE - GROUPS.

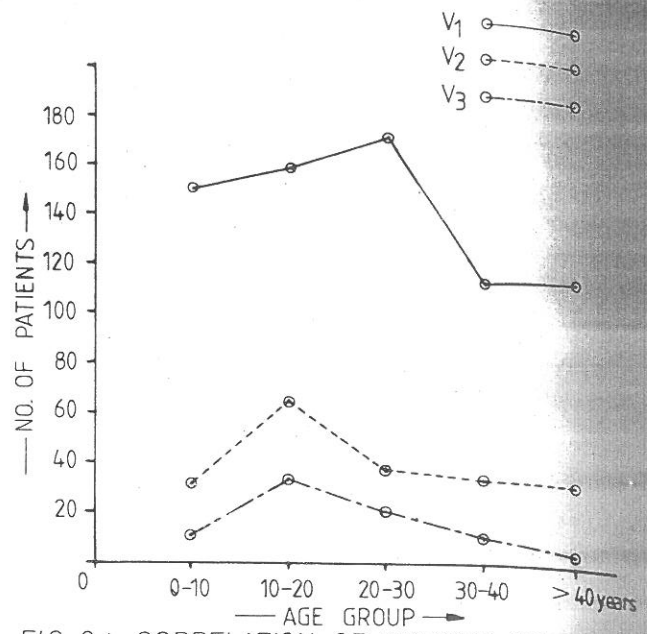


FIG. 2 : CORRELATION OF NUMBER OF PATIENTS IN DIFFERENT STAGES OF VITILIGO IN DIFFERENT AGE - GROUPS.

concentration of lethal preservatives, additives, colourants, flavours and anti-oxidants. Most of these compounds have already been shown to be potential health hazard and even cancerous. In young children between 0-10 years of age, malnutrition and digestive upsets were very frequent followed by recurrent infections and their medication. However, many children have several such identifiable factors operating simultaneously. The occurrence of new lesions often coincide or follow a distinct episode of such trigger factors.¹ Younger people (0-30 years) were seen more frequently with active (VI) vitiligo compared to older people (Fig. 2).

Emotional stress and strain was a salient denominator in vitiligo occurring in teenagers and young adults. Of the 233 patients in 21-30 years of age group, emotional shock/strains were noted in 146 (60%) patients. The occurrence of vitiligo after major illness, severe emotional strain, pregnancy, surgical operations or accidents have been well-recorded.^{1,2,4-6} Endocrine factors were seen to be operable mainly in the patients who developed vitiligo past 40 years of age.

Another significant factor was the occurrence of vitiligo in people belonging to certain geographic areas in the vicinity of industries especially of dyes and plastics. Chemicals such as Thiols, Phenols, Catechols, Mercaptoamines, Quinones and their derivatives have time and again been found to be the common offenders. They may cause depigmentation either by inhibiting tyrosinase or by their direct cytotoxic affects on melanocytes.^{4,7}

Based on the vast experience of over 45 years, and treating over 50,000 fresh vitiligo patients, the senior author found some significant denominators in the causation and spread of vitiligo. More often than not, he noted that none of the patients could be satisfactorily treated or cured till these trigger factors were eliminated/suppressed. To name some important triggers in the Indian patients, malnutrition (including nutritional habits, intake of preserved, stale, junk food etc), intercurrent infections, repeated antibiotic intake, and psycho-social insecurity/shocks headed the table. The preceding factors were more

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identifiable in younger generation, which curiously was seen afflicted with this disorder with a alarmingly higher frequency (Fig. 3 a&b).^{1,5} The genetic background of these patients showed statistically significant incidence of vitiligo in their close relatives.

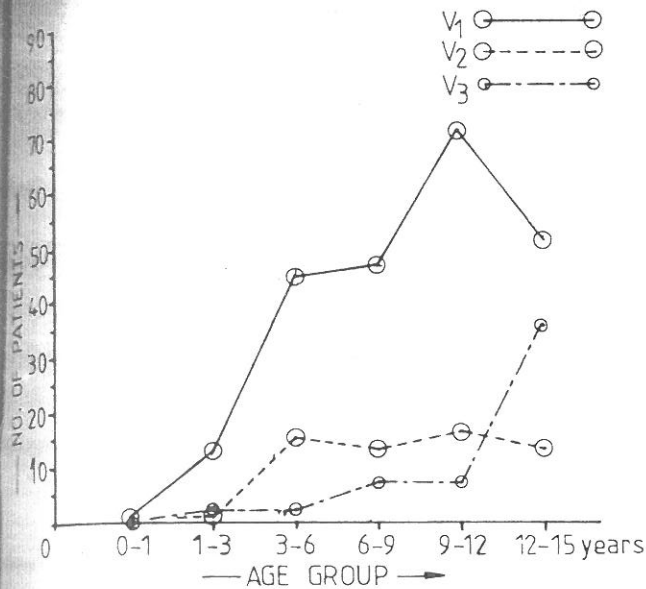


FIG. 3a CORRELATION OF NUMBER OF PATIENTS IN DIFFERENT STAGES OF VITILIGO IN DIFFERENT AGE - GROUPS OF CHILDHOOD VITILIGO

However, the non-occurrence of vitiligo in other family members throughout their life, strengthen our assumption that this genetic tendency is far from significant, unless and until there is a repeated insult on the melanocytes, either by nutritional aberrations, recurrent infections/their toxins, repeated antibiotic therapy, habitual drinking of polluted, chemical-laden water and eating of vegetables grown in fields using water contaminated with industrial waste. Biological changes caused by the above factors might have ushered in depigmentation of the skin. Thus, it will be ideal to avoid using the word 'idiopathic' in relation to vitiligo aetiology. The preceding observation make it imperative to analyse these factors in detail, and eliminate such triggers while charting out the first line therapy of vitiligo.

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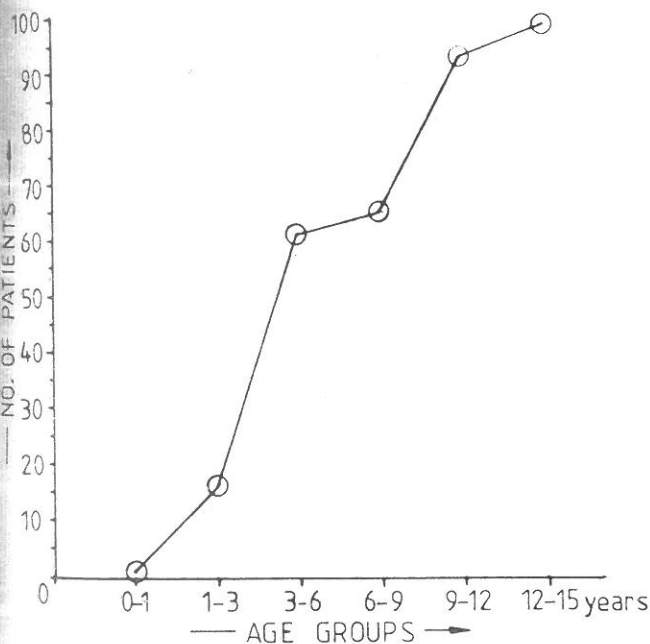


FIG. 3b CORRELATION OF NUMBER OF PATIENTS OF VITILIGO WITH DIFFERENT AGE - GROUPS OF CHILDHOOD VITILIGO