

## The incidence of vitiligo and its clinical features in response to Psoralen group of drugs and associated other diseases

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### Abstract

**Background:** Vitiligo incidence and treatment modalities are diverse and remain unsatisfactory. There is high incidence of vitiligo among patients suffering from systemic disorders.

**Aim:** The present study was undertaken to study the incidence of vitiligo and its response to psoralen group of drugs and association with other diseases.

**Methodology:** 150 patients attending the outpatient department of Dermatology, Venereology and leprology at Chitageri General Hospital and Bapuji Hospital attached to J.J.M Medical College, Davangere were utilized for the current to study clinical features in response to psoralen group drugs in vitiligo and its association with other diseases.

**Results:** The incidence of vitiligo was at around 1.49% in the present study. The localized type was 46.7% and spread type 14% and vulgaris type 2.7% was observed in the current study. Among 50 cases which were studied with psoralen groups of drugs; vitiligo repigmentation occurred in 11 patients treated with 8-Methoxy Psoralen (8MOP) and 1 patient treated with Tri-methyl Psoralen (TMP) and 2 patients treated with Psoralen alone in the present study was recorded. 5 patients out of 130 were associated with other diseases of 2 with Diabetes mellitus, 1 each of Psoriasis, alopecia areata and borderline tuberculoid leprosy observed in the present study.

**Conclusion:** Awareness should be given to the vitiligo patients on its incidence, type and role of psoralen drugs in treatment. Psoralen group drugs could give better results in treatment of vitiligo than other drugs.

**Keywords:** Incidence, Psoralen drugs, Vitiligo

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### Introduction

Vitiligo is an important disorder for both patients and dermatologists. Depigmentation in vitiligo may be due to reduced local and circulating levels of the growth factors which are necessary for the normal proliferation and maintenance of melanocytes<sup>[1]</sup>. Vitiligo often attribute the onset of disease to a specific life event such as crisis or illness<sup>[2]</sup>. Vitiligo lesions may be generalized or localized. Localized vitiligo is restricted to a few small areas on both side of the trunk. Most common site seen was face and dorsum of hands, axillae, umbilicus, nipples and sacrum<sup>[3]</sup>. The most frequently associated diseases are thyroid disease, diabetes mellitus, pernicious anaemia and Addison's disease<sup>[4]</sup>. Oral psoralen photo chemotherapy is used in patients with more extensive vitiligo<sup>[5]</sup>. Psoralens interact with double stranded and super coiled DNA via aromatic ring stacking, hydrophobic interactions and vanderwaals forces. 5-Methoxy Psoralen and 8-Methoxy Psoralen are naturally occurring psoralens whereas 4,5,8- Tri-methyl Psoralen is synthetic<sup>[6]</sup>.

### Materials and Methods

150 patients attending the outpatient department of Dermatology, Venereology and Leprology at Chitageri General Hospital and Bapuji Hospital attached to J.J.M Medical College, Davangere were utilized for the present study. 130 patients out of 150 were recorded for comparative study of the psoralen group of drugs and a total of 50 patients only attended regularly for the observations in the current study. The patients were selected at randomly, irrespective of the age, sex and socioeconomic status. The detailed history and pre-existing lesions repeated friction of pressure and associated systemic disorders and previous treatment was also enquired and recorded. 8-Methoxy Psoralen and Trimethol Psoralen are the only Psoralen drugs used on patients to cure vitiligo in the current study. The study was explained and consent obtained from the patients and also clearance from Ethical committee.

### Results

The total number of patients attending skin OPD were 82,823 out of which there were 1,242 vitiligo patients. The incidence of vitiligo was at around 1.49% [Table 1]. In the present study 55 patients out of 130 belonged to the age group of 11-20 years, 34 patients were in the age group of 20-30 years [Table 2]. In the present study 74 males 56 females out of 130 patients were attended [Table 3]. The onset of lesions was

gradual in 100 patients whereas sudden in 30 patients out of 130 patients in the current study. In majority of the patients the onset was gradual [Table 4]. The commonest site of lesions in the most of the patients was at the lower limbs excluding the feet with an incidence of 54 patients. We have observed lesions in the face and neck in 45 patients followed by over the trunk in 36 patients. The lesions over the upper limbs excluding hands were in 35 patients and in feet 28 patients was observed [Fig. 1, 2, 3, 4]. In 16 patients lesions were present over the mucous membrane. In many patients, 2 or more than 2 sites were involved in the present study [Table 5]. The progression of lesions was slow in 75 patients, 33 patient's lesions were stationary and the lesions were rapid in 22 patients out of 130 patients [Table 6]. 80 patients had number of lesions varying from 2-10, 33 patients with more than 10 number lesions whereas 17 patients had single lesion in the present study [Table 7]. Among 50 cases which were studied with psoralen groups of drugs; vitiligo repigmentation occurred in 11 patients treated with 8-Methoxy Psoralen and 1 patient treated with Trimethyl Psoralen and 2 patients treated with Psoralen (Fig. 4, 5, 6, 7) alone in the present study was recorded [Table 8]. Out of 130 patients 5 patients were associated with other diseases of 2 with Diabetes mellitus, 1 each of Psoriasis, alopecia areata and borderline tuberculoid leprosy observed in the present study.

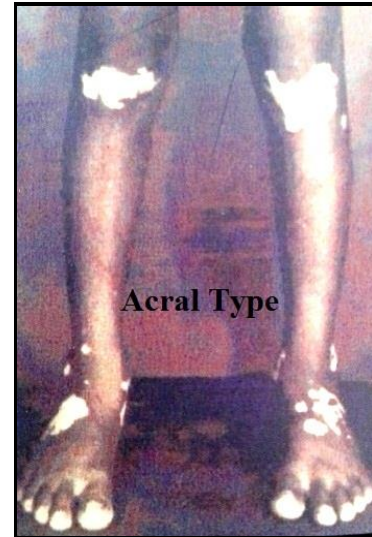
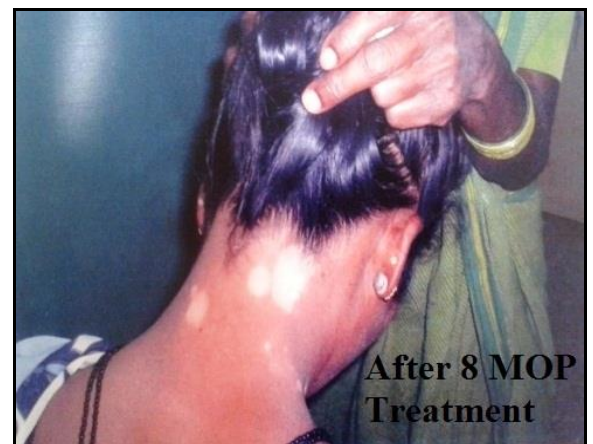
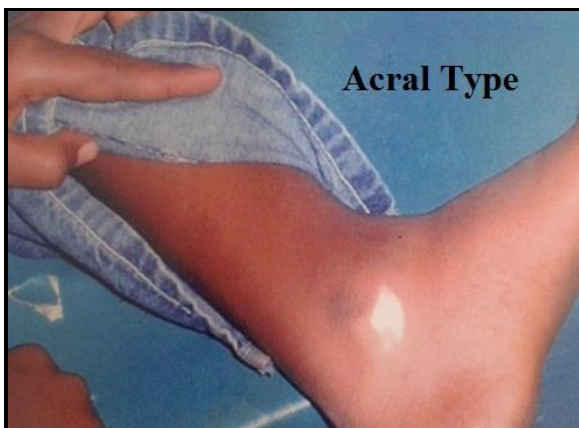
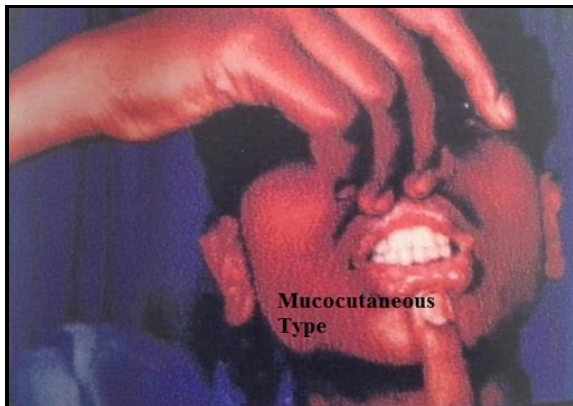


Fig. 1, 2, 3: Types & sites of Lesions in vitiligo



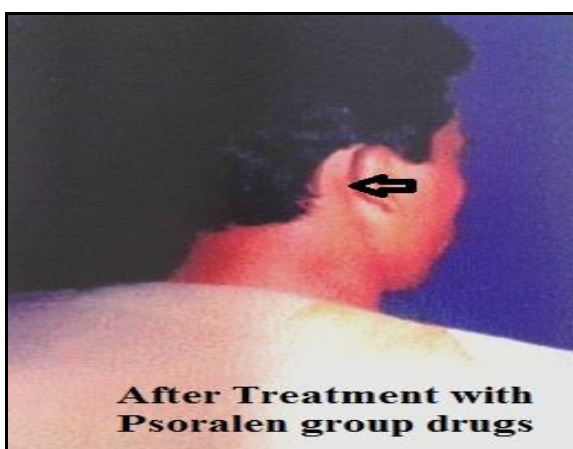


Fig. 4, 5, 6, 7: Before & after treatment with Psoralen group of drugs

Table 1: The incidence of vitiligo

Total number of patients attending skin OPD at Chigateri General Hospital and Bapuji Hospital	82,813
Total number of vitiligo patients	1242
Incidence of vitiligo	1.49

Table 2: Age distribution in the present study

Age Group (years)	Number of Patients	Percentage (%)
Below 10	7	5.38
11 to 20	55	42.30
21-30	34	26.15
31-40	14	10.76
Above 40	20	15.38

Table 3: Sex distribution

Sex	Number of Patients	Percentage (%)
Male	74	56.92
Female	56	43.10

Table 4: Showing onset of Lesions

Onset of Lesions	Number of Patients	Percentage (%)
Gradual	100	76.92
Sudden	30	23.08

Table 5: Showing Location of Lesions

Site of Lesion	Number of Patients	Percentage (%)
Face and Neck	45	34.6
Trunk	36	27.7
Upper limbs (Excluding Acral parts)	35	26.9
Lower limbs	54	41.5
Hands	28	21.5
Feet	26	20
Mucous membrane	16	12.3

Table 6: Progression of Lesions

Progression	Number of Patients	Percentage (%)
Slow	75	57.69
Rapid	22	16.92
Stationary	33	25.38

Table 7: Showing number of Lesions

Number of Lesions	Number of Patients	Percentage (%)
One	17	13.07
Two to Ten	80	61.58
Above Ten	33	25.38

Table 8: Incidence of Psoralen drugs treatment (three drugs)

Number of Patients treated with Psoralen drugs (50)	Percentage (%)
14	28%

## Discussion

The total incidence of vitiligo was 1.49% when compared to the total attendance of the skin cases of outpatients during the present study. The incidence of vitiligo is found to be only 0.14 to 3% of the world population and 4% of the south Indian population in the study conducted by Pagum<sup>[7]</sup>. The incidence of vitiligo among the Japanese population was 2% stated in other study<sup>[8]</sup>. The incidence on the present study was in agreement with previous literature. Positive family history of vitiligo was present in 4.75% of the cases in the present study. The family history of vitiligo was observed in 28% of the cases and also it was 8.6% reported in previous literatures<sup>[9]</sup>. The lower incidence in the present study could be due to social stigma attached to the disease and the hospital being situated in the rural area. In the present study, the common sites involved were the upper limbs below the elbow, lower

limbs below the knee, face and mucous membranes. The distribution of vitiligo was said to occur in exposed parts of the body, intertrigenous area, periumbilical region, mucous membrane, axillae and groin<sup>[3]</sup>. The localized type was 46.7% and spread type in 14% and vulgaris type in 2.7% was observed in the current study. R.C Sain was observed vulgaris type in 29%, acrofacial type in 38%, areata in 21.4% and Zosteriform in 11% cases<sup>[10]</sup>. The localized type observed in the present study was more common than other types. The association of Diabetes mellitus was observed in 2 cases, the association of psoriasis alopecia areata and borderline tuberculoid leprosy in one case each was observed in the present study. The association of diabetes mellitus including juvenile type in vitiligo patients and the association of psoriasis in vitiligo was also observed in previous literature<sup>[11,12]</sup>. In the present study, patients were treated using 8-Methoxy Psoralen (8MOP), Trimethol Psoralen (TMP) and Psoralen alone to find out their efficacy in regaining pigment. 14 cases have regained full pigmentation with Psoralen group of drugs (both oral and topical) in the current study. Postulated psoralens act by inactivating sulfhydryl group, which inhibits melanin formation<sup>[13]</sup>, while in other study suggested that psoralen act by stimulating melanogenesis<sup>[14]</sup>. In view of the fact that it has been the practice and also the experienced in our department since 8-Methoxy Psoralen (8MOP) has been found to be a better drug for the treatment of vitiligo and can be concluded that treatment of vitiligo is not satisfactory but psoralen group drugs could give better results in treatment of vitiligo.

### Conclusion

No artificial pigment is equivalent and acceptable as natural as melanin in repigmentation of vitiligo but psoralen group drugs could give better results in treatment of vitiligo.

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### Conflict of Interest: Nil

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