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Vitiligo and Ocular Involvement

KEYWORDS: Vitiligo, ocular abnormalities, ophthalmological examination

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ABSTRACT *Though vitiligo patients have no ophthalmological complaints, ocular abnormalities have been noted in 40%.Two sixty one patients of different morphological types of vitiligo were studied for ocular involvement. Detailed ocular examinations including visual acuity test, external examination, biomicroscopy and dilated fundoscopy were performed. Incidence of vitiligo was 0.95%. Males outnumbered females. Vitiligo vulgaris was the commonest morphological type. DM Type-II was seen in 9.56%, hypothyroidism in 0.3%. No ophthalmological abnormality was seen.*

Summary
Various studies suggest very strong association between vitiligo and ocular manifestation, noted in 40%. Many ocular abnormalities are non-specific in character and distribution but the visual acity is generally unaffected. Our study, which included a large group of vitiligo patients did not show any association between the two. Thus we conclude that ophthalmological examination may not be mandatory for vitiligo patients.

Introduction
Vitiligo is an idiopathic disease that causes destruction of melanocytes in the skin, mucous membranes, eyes, inner ear, leptomeninges and hair bulb. The uveal tract and retinal pigment epithelium contain pigment cells.Though vitiligo patients have no ophthalmological complaints, ocular abnormalities have been noted in 40% of patients which include choroidal abnormalities, retinal pigmentary abnormalities like dilution of retina pigment and chorio-retinitis. Uveitis is the most common ocular abnormality associated with vitiligo. Non-inflammatory depigmented lesions of the ocular fundus are observed, presumably representing focal areas of melanocyte loss [1]. Many ocular abnormalities are non-specific in character and distribution; and might be ascribed to immunological processes in vitiligo. In spite of various ocular abnormalities, the visual acity is generally unaffected. With the given background, a study was done to understand the association between vitiligo and ocular abnormalities.

Materials and methods
Patients with clinically diagnosed and Wood's lamp confirmed vitiligo were examined for ocular involvement. The study was carried out in an OPD of a teaching institute over a period of 3 years. Two sixty one patients of different morphological types of vitiligo were studied. Demographic features including age, gender, incidence , type of vitiligo, age at onset, site of initial lesion, family history, presence of associated autoimmune disease were recorded in a structured case record proforma. Investigations like hemogram, blood sugar and thyroid function tests were done to rule out systemic associations.

The best corrected visual acuity was obtained for each eye. The anterior segments of the eye were examined with the slit lamp biomicroscope (KOWA-SL7 camera).Intraocular pressure was measured with Perkins hand held Aplanation tonometer.The pupils were dilated and the ocular fundi were examined by direct and indirect ophthalmoscopy.The findings in various parts of the eye including eyelids,conjunctiva, cornea, sclera, iris, optic nerve ,vitreous chamber, lens , choroid and retina were noted.

Results
Incidence of vitiligo in our study was 0.95%. Males outnumbered females.Of the 261 patients 55 were children. The youngest was 2years old and the oldest was 82 years old. Lowest age at onset was 1 year and the highest was 70years. Almost half the cases (50.6%) had developed the disease before 20 years of age. Vitiligo vulgaris was the commonest morphological type .Lower extremity was the commonest site of initial lesion seen in 34%. Family history was seen in 12% of cases. DM Type-II was seen in 9.56% and hypothyroidism in 0.3%.One patient had alopecia areata. No ophthalmological abnormality (including intraocular pressure) was seen in any of the patients irrespective of the type, duration and site of vitiligo.

Discussion
Melanocytes are distributed not only in the skin but also in the eyes (iris, ciliary body, choroid, RPE), ears and leptomeninges. So mechanisms responsible for melanocyte destruction in the skin affect melanocytes at other locations as well. A combination of immunological and cytotoxic mechanisms leads to destruction of cutaneous melanocytes. Two distinct populations of pigment-bearing cells exist: the uveal melanocytes and pigment epithelium. Destruction of uveal melanocytes and pigment epithelium in vitiligo was first documented by Albert et al , who reported various abnormalities in 112 patients, including uveitis, retinal pigment epithelial hypopigmentation, choroidal scars, pigment clumping and transillumination defects. Later Rosenbaum et al. reported a case of bilateral retinal pigment epithelial changes associated with periorbital vitiligo and seizure. Subsequently Albert et al. in the only controlled study found asymptomatic and symptomatic retinal pigment epithelium atrophy in 27% of 223 vitiligo patients and demonstrated a significant increase in retinal pigment epithelium atrophy or hypopigmentation in vitiligo patients. In a study by Cowan et al. ocular inflam-

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mation was not found as a major feature in patients with vitiligo and 40% of patients showed some degree of fundal pigment findings including pigment clump, focal hypo pigmented spots, and choroidal nevi[2].

During 2006, a study done on 45 vitiligo patients, ocular abnormalities including iritis, peripapillary atrophy, pigmented epithelium atrophy and focal hypopigmented spots were reported in ten (22.23%) patients. Anatomical localization, primarily periorbital, and to a lesser extent vitiligo of the genitalia were reported to be the most probable alerting features for ocular findings. Another study performed on 150 patients with vitiligo during 2007, revealed 24 (16%) cases of ocular problems including uveitis and pigment abnormalities in iris and retina in which 18 patients had hypothyroidism, diabetes mellitus or alopecia as an autoimmune disease[2,3].In a study by Biswas G et al of 100 vitiligo patients, 23% showed hypopigmented sports on the iris, 18% pigmentation on anterior chamber, 9% retinal pigment epithelium hypopigmentation, 5% uveitis, 11% chorioretinal degeneration and 34% had no ocular findings[4]. Gopal KV et al in their study concluded that 24(16%) had specific ocular abnormalities like uveitis, iris and retinal pigmentary abnormalities[5]. Sixty of 223 patients with vitiligo (26.9%) had evidence of hypopigmentation or atrophy of the retinal pigment epithelium, or both in a study by Wagoner MD et al[6]. Ayotunde & Olahunle G from Nigeria examined 26 black patients.All ophthalmological assessment profile were normal in their patients, as was observed in our study[7].

All the above studies suggest a very strong association between vitiligo and ocular manifestation, surprisingly our study which included a large group of vitiligo patients did not show any association between the two.

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