

## PATCH PHOTOPATCH TEST AT MANIPAL

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Patch and photopatch testing was performed on 55 patients with history of photosensitivity using Scandanavian photo patch test antigens obtained from Chemotechnique Diagnostics AB Sweden.

The commonest reactions were seen to perfume mix 4 (21.0%), PABA 3 (15.78%), promethazine hydrochloride 3 (15.78%), chlorpromazine hydrochloride 3 (15.78%), balsam of peru 2 (10.52%), usnic acid, hexachlorophane, musk ambrette and 6 methyl coumarin showed 1 positive reaction each (5.26%) suggesting either phototoxicity or photo sensitization. Patch and photo patch test positive reaction suggesting allergic sensitisation was seen to balsam of peru 3 (23.0%) perfume mix 3 (23.0%) promethazine hydrochloride 2 (15.3%) and PABA, 6 methyl coumarin, tribromosalicylanilide, atranorin and wood mix showed positive reaction in one case each (7.69%).

We conclude that photoxic or photo allergic reaction is a problem in India and patch photo patch test should be performed in all cases of idiopathic light eruptions to rule out photo sensitisation and in cases where photo sensitivity of exogenous origin is suspected.

**Key Words :** Patch testing, Photo patch testing, Perfume mix, PABA, Promethazine, Hydrochloride, Chlorpromazine hydrochloride, Balsam of Peru, Usnic acid, Hexachlorophane, Musk ambrette, 6 methyl coumarin.

### Introduction

Patch testing with numerous antigens to detect allergic sensitivity is performed at many places in India. However no attempt has been made to detect the photo sensitisers among the Indian patients. We carried out this study to detect the common exogenous photo sensitisers on patients who presented with clinical features suggestive of idiopathic photodermatoses or photo sensitivity due to exogenous photosensitisers.

### Materials and Methods

Photo patch testing was performed on 55 patients out of which 35 were males and 20 females. Antigens of the Scandanavian photo patch test series obtained from chemotechnique diagnostics AB Sweden was applied in duplicate over the back of the

patients using Vander Bend chambers. After 24 hours the patches were removed and after half an hour the back was examined for positive reaction. One side was then exposed to 15 Joules/cm<sup>2</sup> of UVA while the other site was covered with a black carbon paper.

Both the sites were examined at 72 and 96 hours and were interpreted as shown in Table 1.

**Table I.** Interpretation of results.

Patch	Photo Patch
- Negative reaction	ph - Negative reaction
? Doubful reaction	ph ? Doubtful reaction
+ Weak reaction (non-vesicular)	ph + Weak reaction (non-vesicular)
++ Strong reaction (Oedematous or vesicular)	ph ++ Strong reaction (Oedematous or vesicular)
+++ Extreme reaction (Ulcerative or bullous)	ph +++ Extreme reaction (Ulcerative or bullous)
IR Irritant reaction	ph T Photo toxic reaction
NT Not Tested	ph NT Not tested

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Table II.

Antigens	%	Vehicle	Photo Patch		Patch Photo	
			no.	%	patch Test +ve no.	%
Trichlorocarbanilide	1.0	pet	-	--	-	--
Promethazine hydrochloride	1.0	pet	3	15.78	2	15.3
4 Amino Benzoic Acid	5.0	pet	3	15.78	1	7.69
Tribromosalicylanilide	1.0	pet	-	--	1	7.69
Chlorpromazine hydrochloride	1.0	pet	3	15.78	1	7.69
Musk ambrette	1.0	pet	1	5.26	-	--
6 methyl coumarin	1.0	Alc	1	5.26	1	7.69
Bithionol	1.0	pet	-	--	-	--
Fentichlor	1.0	pet	1	5.26	-	--
D-Usnic acid	0.1	pet	-	--	-	--
Atranorin	0.1	pet	-	--	-	--
Wood mix	20.0	pet	-	--	1	7.69
Evernic acid	0.1	pet	-	--	1	7.69
Balsam of peru	25.0	pet	2	10.52	3	23.0
Tetra Chlorsalicylanilide	0.1	pet	-	--	-	--
Hexachlorophane	1.0	pet	1	5.26	-	--
Chlorhexidine digluconate	0.5	Ag	-	--	-	--
Triclosan	2.0	pet	-	--	1	7.69
Diphenhydramine hydrochloride	1.0	pet	-	--	1	7.69
Perfume mix	6.0	pet	4	21.0	3	23.0

## Results

Table II shows the antigens of the photo patch test series and positive photo patch along with positive results to both patch and photo patch testing.

## Comments

Photosensitive dermatosis are seen all over the world. But photosensitive reactions is commonly reported among the Caucasians.<sup>1</sup> Most of the external photo sensitizers have the action spectrum in the long wave UV light.<sup>1</sup> No study has been carried out amongst the Indians to detect the photo allergic or photo toxic reactions to external chemicals. In our study most frequent positive reactions were seen to perfume mix 4 (21.0%), PABA 3 (15.78%), chlorpromazine hydrochloride 3 (15.78%), promethazine hydrochloride 3 (15.78%), balsam of Peru 2 (10.52%) and others like usnic acid, hexachlorophane, musk ambrette and 6 methyl coumarin had 1 positive reaction to each (5.26%).

Table III. Sources of photo sensitizers.

Prefume Mix	-	Dental washes Creams Perfumes
PABA	-	Sunscreens
Promethazine hydrochloride	-	Antihistamine
Chlorpromazine hydrochlorid	-	Tranquiliser
Balsam of Peru	-	Ointments Suppositories Tobacco Fixative in perfumes
Usnic Acid	-	Preservative in deodorants
Hexachlorophane	-	Disinfectant Soaps Creams
Musk Ambrette	-	After Shave applicative colognes
6 Methyl coumarin	-	Soaps Toiletries Cosmetics

The common sources of photosensitizers in India are shown in Table-III.

The Scandanavian multicentre photo patch study showed maximum positivity to musk ambrette and PABA.<sup>2</sup> The 6 year study

in New York had maximum positivity to 6 methyl coumarin, PABA and musk ambrette.<sup>3</sup> The German, Australian and Swiss photo patch test group which was performed in 45 dermatologic clinics had maximum positivity to tiaprofenic acid, caprofen, promethazine hydrochloride and hexachlorophane.<sup>4</sup>

We believe that in addition to these sensitizers there are numerous other sensitizers in our surrounding either from the plant sources or from chemicals which are yet unreported. We intend to take up studies to detect some of these sensitizers.

## References

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