

EVALUATION OF DESENSOL AS A STANDARD PATCH TEST KIT

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In a study undertaken to find out the usefulness of 'Desensol' patch test kit to detect contact allergens, in 200 cases revealed 24 cases with negative patch test with all the antigens and 55 cases reacted to even the vaseline control. Excluding these 79 cases, the common contact allergens were potassium bichromate (40.49%), TMTD (28.92%), PPD (24.79%), epoxy resin (23.14%), colophony (19.0%), nickel sulfate (19.0%), tramycetin (19.0%) and nitrofurazone (19.0%). Desensol patch test kit is lacking in certain antigens while in our country due to varied environmental factors and social customs, a person is exposed to a large number of natural and man-made contact allergens. So usefulness of such a kit like Desensol is limited.

Key words : Patch test kit, Desensol, Contact dermatitis.

Desensol patch test kit was evaluated for its usefulness and efficacy. This kit contains thirty common contact allergens in 2 ml polypropylene syringes each.

Materials and Methods

The material comprised of 200 patients (136 males and 64 females) suspected to have contact dermatitis. In all these patients a detailed history and clinical examination were carried out to identify the suspected allergens. Out of these 200 patients, 101 had eczematous lesions on hands, 79 had on feet and the remaining 20 had air-borne contact dermatitis. Eighty two patients were exposed to the suspected allergens during the pursuit of their professional activities. Cosmetics were responsible in 36 cases, wearing apparel in 32 cases, topical medicaments in 30 cases and air-borne antigens in 20 cases. All patients were patch tested as described by Fisher,¹ with Desensol patch test allergens.

Results

Out of 200 suspected cases of contact dermatitis, vaseline control was positive in 55 (27.5%)

cases and 24 patients did not react to any of the thirty allergens. So out of 200 cases, these 79 cases were excluded from analysis. Of the 121 patients, 78 were males and 43 females. The oldest patient was of 65 years and the youngest patient was 10 years. Maximum number (51.23%) of patients were in the age group of 16-30 years. Housewives and workers of dyeing and printing industries were maximally affected.

Number of patients with positive patch tests to different allergens are shown in table I.

Eleven housewives had positive patch test with nickel, lanolin, Peru balsam, and 22 workers of dyeing and printing industries had positive patch test results with potassium bichromate and PPD. Eleven patients with cement dermatitis reacted to potassium bichromate and 21 patients with topical medicament sensitivity reacted to different topical medicaments.

Comments

A striking feature of the present study was positive patch test with vaseline control in 55 (27.5%) cases. Kaur and Sharma² reported 58% incidence of vaseline control positivity with Desensol kit. This rate of positivity is a serious drawback of this kit. The company has not mentioned about the particular type of

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Table I. Results with Desensol patch test allergens in 121 patients of contact dermatitis.

| Allergens | No. of patients with positive patch test | Percentage |
|---------------------------------|--|------------|
| 1. Lanolin 30% | 19 | 15.70 |
| 2. Eucerine 100% | 9 | 7.43 |
| 3. Benzocaine 5% | 13 | 10.74 |
| 4. Peru balsam 10% | 22 | 18.18 |
| 5. Formaldehyde 2% | 13 | 10.74 |
| 6. Turpentine 10% | 11 | 9.09 |
| 7. Colophony 20% | 23 | 19.00 |
| 8. Epoxy resins 1% | 28 | 23.14 |
| 9. Nickel sulphate 5% | 23 | 19.00 |
| 10. Potassium bichromate 0.1% | 49 | 40.49 |
| 11. Cobalt sulphate 5.0% | 19 | 15.70 |
| 12. Ethylenediamine 1.0% | 17 | 14.04 |
| 13. P.P.D. 1% | 30 | 24.79 |
| 14. Paraben mix | 14 | 11.57 |
| 15. Wood tars | 16 | 13.22 |
| 16. Mercaptobenzothiazole 1% | 22 | 18.18 |
| 17. TMTD 1% | 35 | 28.92 |
| 18. Thimerosal 0.1% | 7 | 5.78 |
| 19. Ammoniated mercury 1% | 20 | 16.52 |
| 20. Methyl salicylate 2% | 4 | 3.30 |
| 21. Hexachlorophene 1% | 14 | 11.57 |
| 22. Iodochlorhydroxyquinolin 1% | 17 | 14.07 |
| 23. Neomycin sulphate 20% | 18 | 14.87 |
| 24. Framycetin sulphate 5% | 23 | 19.00 |
| 25. Nitrofurazone 1% | 23 | 19.00 |
| 26. D.D.T. 1% | 13 | 10.74 |
| 27. Malathion 0.5% | 16 | 13.22 |
| 28. Parthenium 15% | 18 | 14.87 |
| 29. Garlic 100% | 12 | 9.91 |

petrolatum used for dispersing the patch test allergens. Petrolatum is bland and occlusive and is considered the most suitable base for most of the allergens.³ Allergy to petrolatum is almost unknown,³ though occasionally patients who react to yellow and/or white paraffin have been reported.^{4,5} This may not be true for Indian patients. Bajaj and

Chatterjee⁶ reported 34.5% positive reaction to yellow petrolatum. Because of such frequent false positive reactions, petrolatum is not a useful base for patch testing in our country. Polyethylene glycol 300 or 400 may be better, because contact dermatitis due to polyethylene glycols is rarely reported.⁶

Negative patch test results in 24 patients could be due to lack of certain allergens in the Desensol kit. Out of 24 cases, plastic was responsible in 13 cases, topical medicaments like Terramycin in 2 cases, Gentamicin in 2 cases and acriflavine in 3 cases; rubber in 2 cases and air-borne antigen in 2 cases.

As compared to standard series described by Cronin,³ ICDRG⁷ and NACDG,⁸ Desensol patch test allergens is lacking in chlorocresol and carbamix, PPD mix, para tertiary butyl phenol and other allergens. Chlorocresol, a phenolic compound, is an efficient bactericide and is used in pharmaceutical creams and lotions and in formulation of some diluted steroid cream. Carba mix contains mixture of dithiocarbamates which are used in rubber industries as an accelerator to speed up vulcanisation. PPD mix contains a mixture of phenyl cyclohexyl PPD, isopropylphenyl PPD, diphenyl PPD which are antioxidants, used in rubber to prevent oxidation and ozone attack of natural latex rubber.

Para-tertiary butyl phenol 2% in petrolatum should be included because it is an antioxidant added to the plastic of cellulose acetate to prevent discoloration and photooxidation. Cellulose acetate is used in rayons, tooth brush, combs, knife handles, films, spectacle frames and display boxes. Para-tertiary butyl phenol also occurs in para-tertiary butyl phenol formaldehyde resin which is used as adhesive in shoes, watch straps, hand bags, rubber glue in car factory and in domestic glues. So it is a common sensitiser to which men may be exposed.

References

1. Fisher AA : Symbols for patch test results, in : Contact Dermatitis, 2nd ed, Editor, Fisher AA: Lea and Febiger, Philadelphia, 1975; p 29.
 2. Kaur S and Sharma VK : Desensol patch test battery, Ind J Dermatol Venereol Leprol, 1986; 52 : 52-53.
 3. Crenin E : Contact Dermatitis, Churchill Livingstone, London, 1980.
 4. Malten KE: A case of contact eczema to yellow soft paraffin, Contact Dermatitis Newsletter, 1969; 5 : 106-107.
 5. Grimalt F and Romaguera L : Sensitivity to petrolatum, Contact Dermatitis, 1978; 4 : 371-372.
 6. Bajaj AK and Chatterjee A : The ideal base for patch testing, Ind J Dermatol Venereol Leprol, 1984; 50 : 155-157.
 7. Fregert et al (ICDRG) : Epidemiology of contact dermatitis, Trans St John's Hosp Dermatol Soc, 1969; 55 : 17-18.
 8. North American Contact Dermatitis Group : Epidemiology of contact dermatitis in north America, Arch Dermatol, 1973; 108 : 537-539.
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