

Letter to the Editor

Should para-phenylenediamine (PPD) 1% pet. be part of commercially available standard series?

Dear Sir,

We are concerned that Hermal may be discontinuing 1% para-phenylenediamine (PPD) pet. as part of the Trolab standard series on the basis of unpublished data from the German Contact Dermatitis Group. PPD has been known as a contact allergen for 100 years and as far back as 1939 was suggested as a screen for hair dye allergy (1). Although PPD does not pick up all hair dye allergens (2), it remains the essential basic screen for this within the 'European' standard series.

The question of frequent active sensitization caused by including PPD within a standard series has been raised as a hazard (3). If the risk were high then subjects who were undergoing repeat patch testing should show a significantly higher number of PPD-positive reactions. We have shown, comparing a large number of subjects undergoing repeat patch testing ($n = 1035$) compared to those patch tested for the first time ($n = 12,265$), no significant difference in the frequency of PPD allergic subjects (3.4% versus 3.4%) (4). One study showed that subjects who did not develop reactions to PPD on patch testing until day 7 had less history of hair dye reactions than those who reacted at day 3, and interpreted this as signifying active sensitization (3). This could, however, be interpreted as simply showing that subjects with more powerful PPD allergy (and hence reacting at day 3) were more likely to have a clear history of hair dye reactions.

Undoubtedly, PPD reactions can occasionally be marked, and we routinely test subjects with a history of very severe hair dye reactions with 0.1% PPD before progressing to 1%. In the case of sensitization to PPD through 'henna' temporary tattoos, we have already suggested starting at 0.01% before progressing to higher concentration (5).

A lowering of the test concentration of PPD in the European series is a way to diminish active sensitization. However, such a lowering should only be considered if published data from the

German Contact Dermatitis Group unambiguously demonstrated that active sensitization at patch testing is a significant problem. With a decrease in concentration of PPD not only the rate of active sensitization will fall but also the frequency of PPD reactions. When using 0.5% of a PPD salt instead of 1% PPD base for patch testing, the frequency of PPD reactions fell by over 50% (6).

Many, if not all, commercially available patch test allergens have the propensity to actively sensitize individuals occasionally whilst undergoing patch testing. Examples other than PPD quoted include epoxy resins, isothiazolinones, acrylates, sesquiterpene lactones and even medicament allergens such as budesonide (7). However, we would argue that before advocating any action to withdraw agents from a 'standard' series on the grounds of risk of sensitization, one would have to be sure of benefit outweighing disadvantage. The risk of missing possibly clinically relevant contact allergies has to be judged against the risk of patch test sensitization (8). Withdrawal from the standard series would mean many cases of missed allergy, as the frequency of positive PPD reactions amongst patch test populations is consistently over 3% (6).

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References

1. Bonnevie P. Aetiologie und pathogenese der Ekzemkrankheiten. *Klinische Studien über die Ursachen der Ekzeme unter*

- besonderer Berücksichtigung des Diagnostischen Wertes der Ekzempfen Busch, Copenhagen: Barth Leipzig, 1939.*
2. Sosted H, BASKETTER D A, Estrada E, Johansen J D, Patlewicz G Y. Ranking of hair dye substances according to predicted potency-quantitative structure-activity relationships. *Contact Dermatitis* 2004;51: 241–254.
 3. Devos S A, Van der Valk P G M. The risk of active sensitisation to PPD. *Contact Dermatitis* 2001; 44: 273–275.
 4. Dawe S A, White I R, Rycroft R J G, Basketter D A, McFadden J P. Active sensitisation to para-phenylenediamine and its relevance: a 10 year review. *Contact Dermatitis* 2004; 51: 96–97.
 5. Ho S G, White I R, Rycroft R J, McFadden J P. A new approach to patch testing with para-phenylenediamine allergy secondary to temporary black henna tattoo. *Contact Dermatitis* 2004; 51: 213–214.
 6. Armstrong D B K, Jones A B, Smith H R et al. Occupational sensitization to p-phenylenediamine: a 17 year review. *Contact Dermatitis* 1999; 41: 348–349.
 7. Le Coz C L, Bakali A E, Untereiner F, Grosshans E. Active sensitisation to budesonide and para-phenylenediamine from patch testing. *Contact Dermatitis* 1997; 39: 153–154.
 8. Bruze M, Conde-Salazar L, Goosens A, Kanerva L, White I R. Thoughts on sensitizers in a standard patch test series. *Contact Dermatitis* 1999; 41: 251–250.
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