

Etiology of para-Phenylenediamine Sensitization: Hair Dye and Other Products

To the Editor:

para-Phenylenediamine (PPD) is one of the most potent sensitizers known. It is widely used in cosmetics, especially as the main ingredient in hair dyes. It is also used in rubber manufacturing and as a color fixative in the textile industry and is therefore present in several objects used daily.^{1,2}

Continued exposure to PPD may result in allergic contact eczema caused by different items used in daily life.³ During the period from January 2003 to June 2006, patients seen at the Allergy and Phototherapy Service of the Santa Casa de São Paulo and with test results positive for PPD were selected to determine the frequency of positive tests to PPD in patients with a presumptive diagnosis of contact dermatitis (CD) and to verify the primary materials that contain PPD and are responsible for CD.

Among the 540 patients tested, 23 (4.2%) experienced a positive and significant reaction to PPD. Similar to what is presented in the medical literature, this study showed that PPD sensitization was more frequent on the face and scalp (70%) of female adults (41–60 years of age) who had contact with hair dye (48%).^{1,4,5} Our study found no relation between CD caused by PPD and occupation, and it is therefore not characterized as an occupational disease in the population seen at our outpatient clinic.

As to history of contact, concurrent with other studies published, hair dye was the most frequent agent (48%). It

is worth mentioning, however, that the frequency of contact with rubber (17%), black shoes (17%), elastic (9%), and makeup (9%) observed was significant. Moreover, 52% of patients with a positive contact test and a significant response to PPD presented an association with other products routinely used by patients.

Hence, when the etiology of CD to PPD is investigated, materials present in objects of daily use such as rubber, shoes, elastic products, and makeup should be considered.

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