Reviewer's report

Title: Comparison of specific IgG against plastic resin in workers with and without chemical dermatitis.

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Reviewer: Lygia Therese Budnik

Reviewer's report:

Immunological dot blotting was carried out to detect serum chemical-specific IgG using originally prepared diagnostic antigens, comprising a mixture of human serum albumin and the plastic resin or its components under various conditions. In this study, the diagnostic significance of chemical-specific IgG was studied among workers of a company where a mass outbreak of chemical dermatitis had occurred after changing a plastic resin to a new one.

The subject is important in its field, since allergy testing is controversial in the diagnosis of allergic dermatitis because of its poor reliability. Although not perfect, a clinical approach combining thorough history and physical examination, elimination of other differentials and response to strict anti-resin treatment is adopted by most authors. The differential diagnosis generally includes all pruritic adverse dermatoses. This pattern can be seen in other hypersensitivity reactions and is mostly nonspecific.

The authors developed a simple assay for this case report, to detect sensitization of 11 workers exposed to plastic resins. The are some important aspects in study design, and the interpretation of the data which should be addressed.

Major compulsory edits.

-it is difficult to follow the results part, since no table legends are provided (the authors should add this including the units of the results shown: i.e. house dust 3.43, 3.43 of what?

-Why, the authors have chosen to measure food allergens as a control? Is there any indication for a cross-inter-reaction between the i.e. shrimp allergy and the dermatitis caused by plastic resins? I would rather suggest to measure antibodies against isocyanates (commercial tests are available)

-Most of the data provided was measured by a commercial laboratory, but no details were provided on the laboratory, the methods used, quality assurance, standards used, positive negative controls etc. How were the antibodies measured, the authors should provide the method used, also positive and negative controls and more details on a commercial laboratory (is it brand name? SRL Diagnostics? In which place was it measured with what standards?). Did you use the WHO standards?

-The data shown in the figure 1 are in a not in a good quality, the authors should
substitute those and provide better figures

-the authors should provide data on control subjects, not working in the plant, do you see any sensitization?

-In order to validate the method, it would be useful to compare the immune-dotblot data with the results of a challenge test, patch-test or skin testing.

-the authors should read and include most recent relevant literature, such as (some examples):


Minor essential edits

Some questions should be answered:
- How do you define “dermatitis” clinically?
- Did the patients show no respiratory symptoms?

Discretionary revisions
- The authors should rather use the term total IgE than “unspecific” IgE

Quality of written English: Acceptable

Declaration of competing interests:
I declare that I have no competing interests