Limited Concordance Between “Oakmoss” and Colophony in Clinical Patch Testing

To the Editor:

Recently, Lepoittevin et al (2000) reported on the detection of various resin acids in “treemoss” perfume extracts, some of them identical to those found in colophony and its oxidation products, respectively. Furthermore, a considerable contamination of “oakmoss” raw material, especially the material used by Trolab (Reinbek, Germany) for manufacturing “oakmoss” patch test material, with these resin acids was found (5.6% resin acids and 0.7% 7-oxo-dehydroabiatic acid, a sensitizing oxidation product of colophony). Accordingly, the majority of their 17 patients sensitized to colophony not only reacted to “treemoss” (n = 12), but also to “oakmoss” by Trolab (n = 9), but rarely to “oakmoss” by Chemotechnique (Malmo, Sweden, n = 2) containing less than 0.4% wt/wt resin acids.

In the letter, however, they wrote: Hu et al “recorded no or negligible LIF immunoreactivity in disease control skin”, whereas their group “always observed LIF immunoreactivity in normal skin”. Quantitative comparison should be taken under the same conditions. In McKenzie’s report (Paglis et al, 1996), the LIF immunostaining in normal skin seemed strong. But they used a different antibody (an affinity-purified polyclonal antibody against the LIF peptide, N-18, Santa Cruz, CA), a different immunoreactive condition (concentration of primary antibody 1 µg per ml, incubated for 12 h), and a different section method (paraffin-embedded section). The normal skin samples they used were obtained from surgery patients, and transported in DMEM medium to the laboratory. Traumatic reaction might occur in this step, resulting in the elevation of cytokine concentrations (including LIF). On the contrary, we fixed all the biopsy samples immediately in formalin. Furthermore, the ethnic difference should also be considered as an effective factor.

In our article, we compared LIF immunoreactivity in biopsied skins between ALS and other neurodegenerative disease controls. For ethical reasons, we did not include any biopsied skin specimens from normal subjects. We could not know how strong the LIF immunoreactivity was in normal skin, and whether immunoreactivity in ALS skin was just the same as that in normal skin. Nevertheless, we did not negate the LIF immunoreactivity in the skin of disease control. We also thought that a low level of LIF immunoreactivity in normal skin was reasonable. We emphasized that ALS patients expressed far more LIF in skin than the disease control subjects did. In our study, the immunoreactivities in the skins of ALS cases and controls were detected simultaneously under the same experimental conditions. The immunoreactive intensity was expressed as optical density (OD, arbitrary unit). The OD of ALS skins ranged from 9.0 to 1.9, while that of disease controls ranged from 1.8 to 0.4. Although the immunoreactive pattern in ALS with an OD of 1.9 was similar to that in disease-control with an OD of 1.8, the ALS group was significantly different from the disease control group statistically. Furthermore, we found that the OD in ALS showed a progressive increase in relation to duration of the illness (r = 0.82, p < 0.01), suggesting that OD in long duration patients should be higher than that in normal controls. The OD in ALS patients with a duration of 3.2 y was 9.0, while that of 0.4 y was only 1.8. We do not believe OD in normal skin could be as high as 9.0, unless they were proved by simultaneous and quantitative comparison.

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Table I. Patch test results with colophony (20% pet.) and “oakmoss” (1% pet., both by Trolab) in 12614 patients between 1992 and 1999

<table>
<thead>
<tr>
<th>Colophony</th>
<th>“Oakmoss”</th>
<th>Sum/(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>neg.</td>
<td>10905</td>
<td>11793 (93.5%)</td>
</tr>
<tr>
<td>2/IR</td>
<td>134</td>
<td>177 (1.4%)</td>
</tr>
<tr>
<td>+</td>
<td>261</td>
<td>350 (2.8%)</td>
</tr>
<tr>
<td>++</td>
<td>130</td>
<td>217 (1.7%)</td>
</tr>
<tr>
<td>+++</td>
<td>34</td>
<td>77 (0.6%)</td>
</tr>
</tbody>
</table>

Sum/(%) = 11464 (90.9%) 315 (2.5%) 536 (4.2%) 227 (1.8%) 72 (0.6%) 12614 (100.0%)

... (continued from previous page)

the notion of minute traces of resin acids present in “oakmoss” being capable of eliciting a positive reaction at least in patients with extreme sensitivity to colophony. Of course, non-specific mechanisms like the “angry back syndrome” must also be considered if any very strong reaction is observed, and, indeed (very) strong reactions are generally associated with an increased number of concomitant patch test reactions (J. Brash, personal communication, 2000).

Last but not least the possibility of concurrent sensitization to “oakmoss” and “treemoss”, which are used together in perfumes (Dahlquist and Fregert, 1980) — intentionally or unintentionally (by using “oakmoss” raw material that is often blended with the cheaper “treemoss” material) — had not been taken into account by Lepoittevin et al. (2000). In principle, highly purified patch test material should be used to standardize patch testing wherever possible — and necessary. The question remains: is pure “oakmoss” patch test material a necessity, in view of the largely combined clinical exposure to “oakmoss” and “treemoss”, or, conversely, is not “contaminated” patch test material even more adequate to sensitively diagnose relevant sensitization?

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Reply

To the Editor:

We read with interest the letter from Uter et al. (2001) on the concordance between “oakmoss” and colophony in clinical patch testing.

The aim of our paper (Lepoittevin et al. 2000) was to see if patients with a well-established allergy to colophony could react when tested with usual concentrations of “oakmoss” due to the presence of resin acids and their oxidation products. The 17 patients included in our study were therefore selected on the base of their known past and relevant allergy to colophony. The aim of our study was never to evaluate the percentage of concordance between oakmoss and colophony on a large population but to draw attention to a possible misdiagnosis due to the presence of impurities in patch test material.

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