Lupin sensitisation in a population of 1,160 subjects

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ABSTRACT

Lupin is part of the Mediterranean diet and is also used as a thickener of food products. It has been recognised as a cause of serious allergic reactions. This study aims at determining the prevalence of lupin sensitisation in 1,160 subjects consulting allergologists. This population performed skin prick tests (SPT) to lupin. In case of positivity, a clinical questionnaire was applied and the subjects were tested for other legumes, common inhalants and latex.

We find a 4.1% sensitisation rate to lupin, a 75% co-sensitisation between lupin and legumes, a 82.1% co-sensitisation between lupin and pollen and a 28.5% co-sensitisation between lupin and latex.

To conclude, we documented a high lupin sensitisation in a selected population, thus stressing the importance of lupin as a food allergen.

Key words: food allergy, latex, legumes, lupin sensitisation, pollen.

INTRODUCTION

This study documented a lupin sensitisation rate of 4.1% (Lupinus sp), a member of the Leguminosae family, is part of the Mediterranean diet and is also used as a thickener of wheat flour and other food products all over Europe. Though it has been recognised as a cause of serious allergic reactions, the prevalence of sensitisation and allergy is not documented.

MATERIALS AND METHOD

This study aims at determining the prevalence of lupin sensitisation in a selected population. For 1 year (May 2005 to May 2006), all individuals consulting allergologists at Hospital Pulido Valente (Lisbon, Portugal) and performing skin prick tests (SPT) to airborne and food allergens were further tested for lupin (commercial extract, IPI). In case of positivity to lupin, a clinical questionnaire was applied, the subjects were skin-prick-tested for other legumes (fava bean, pea, chick-pea, bean, soy, peanut and lentil), common inhalants and latex (commercial extract, BIAL) and lupin-specific IgE was measured (UNICAP).

RESULTS

In a population of 1,160 there were 48 subjects with positivity to lupin (4.1% sensitisation rate), 39 of which answered clinical questionnaires (18 males, 21 females; average age 33.4). From these, 28 performed the additional SPT (see table I for results) and 12 measured specific IgE. Nine subjects (± 48-39) could not be contacted for the questionnaire, 11 (± 39-28) could not perform the additional SPT and a further 27 (± 39-12) could not measured lupin-specific IgE.

Among the 39 questioned subjects, 29 ingested lupin regularly without symptoms, 5 reported con...
vincing symptoms of allergy (urticaria 2 patients, ana-
phylaxis 1, respiratory 1, abdominal pain and diar-
rhoea 1), 5 had never eaten lupin and all eat peanut
without symptoms. All 5 patients with lupin allergy
were pollen-sensitised and reported symptoms dur-
ing the pollen season.
Measurement average of lupin-specific IgE was
1.6 kUA/L (min-0.10kUA/L, max-17.3kUA/L).

DISCUSSION AND CONCLUSIONS

The high (4.1 %) lupin sensitisation rate is compa-
rable to peanut in a study of french subjects consult-
ing allergologists. As no systematic tolerance inves-
tigation through oral food challenge was carried out
in the subjects not regularly eating lupin, the allergy
prevalence could not be ascertained.

This study, like others, demonstrated a high (75 %)
co-sensitisation between legumes. However, its
clinical implications could not be drawn, as subjects
did not regularly eat all the tested legumes.
Among the 28 patients performing additional SPT,
23 (82.1 %) were also sensitised to at least one
pollen, which suggests cross-reactivity. As previous-
ly documented for legumes, we find that all patients
with lupin allergy are pollen-sensitised, which sup-
ports the hypothesis that pollen-leguminosae cross-
reactivity might have clinical significance.
Our latex sensitisation prevalence (28.5 %) comes
close to that reported for risk groups for natural rub-
ber latex allergy. The existence of cross-reactivity be-
tween latex and Leguminosae has already been doc-
umented in inhibition studies and could explain this
result.
To conclude, we find a high lupin sensitisation in
1,160 subjects consulting allergologists, thus stress-
ing the importance of lupin as a food allergen.

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Latex and chickpea (Cicer arietinum) allergy: first description of

Table 1

<table>
<thead>
<tr>
<th>Results of the SPT (28 subjects).</th>
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<tbody>
<tr>
<td>N° of subjects with positive test</td>
</tr>
<tr>
<td>At least one legume 7</td>
</tr>
<tr>
<td>Fava bean 9</td>
</tr>
<tr>
<td>Soy 8</td>
</tr>
<tr>
<td>Chick-pea 13</td>
</tr>
<tr>
<td>Pea 8</td>
</tr>
<tr>
<td>Peanut 12</td>
</tr>
<tr>
<td>Bean 13</td>
</tr>
<tr>
<td>Lentil 7 (18 not tested)</td>
</tr>
<tr>
<td>At least one pollen 23</td>
</tr>
<tr>
<td>Grasses 14</td>
</tr>
<tr>
<td>Birch pollen 11</td>
</tr>
<tr>
<td>Mugwort 15</td>
</tr>
<tr>
<td>Olive 10</td>
</tr>
<tr>
<td>Latex 6</td>
</tr>
</tbody>
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