Use components to identify patients for appropriate olive pollen SIT

Resolve multiple positivity to pollen tests
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Most olive pollen allergic patients are poly-sensitized to several tree, weed or grass pollen allergens and the case history does not always clearly suggest which pollens are causing the symptoms.\textsuperscript{1,4,9} Moreover, a positive olive pollen extract test may be a result of cross-reactivity and not by genuine olive pollen extract sensitization.\textsuperscript{1,4,6}

Complete natural extract detects sensitization to olive with high efficiency and sensitivity:
- Olive pollen t9

Components can help explain multiple positive pollen extract tests and resolve:\textsuperscript{1,6,10}
- True co-sensitization to various pollens
- Cross-reactivity caused by profilins, polcalcins or CCD

Specific olive pollen components:\textsuperscript{1,2,7}
- Ole e 1 – Trypsin inhibitor
- Ole e 7 – Lipid transfer protein
- Ole e 9 – 1,3 beta-glucanase

Components explaining cross-reactivity between various pollens:\textsuperscript{6,8,10}
- Polcalcin
- Profilin
- MUXF3 (CCD)
Suggested test profiles

**ImmunoCAP COMPLETE EXTRACTS**
- t9

**ImmunoCAP COMPONENTS**
- Ole e 1, Ole e 7, Ole e 9
  - Ole e 1
    - Trypsin inhibitor like protein
    - Major olive pollen allergen
    - Marker also for ash, lilac and privet sensitization
  - Ole e 7
    - nsLTP
    - Associated with severe respiratory reactions, induced by high exposure
    - Limited cross-reactivity to other nsLTPs
  - Ole e 9
    - 1,3 beta-glucanase
    - Associated with severe respiratory reactions
    - Limited cross-reactivity to other nsLTPs

**MARKERS FOR CROSS-REACTIVITY**
- Phl p 7
  - Polcalcin
    - Homologue of Ole e 3
    - Unique to pollen
    - Very similar in all species
  - Proflin
    - Homologue of Ole e 2
    - Present in all pollens and plant foods
    - Very similar in all species
  - Grass profilins and polcalcins can replace the corresponding olive components due to the high degree of similarity
- Phl p 12
- MUX F3
  - CCD marker
    - Present on natural allergens from pollens, venoms and foods of plant origin
    - Not present on recombinant components
    - Rarely clinically relevant
Pollen of olive tree (*Olea europaea*) is one of the most important causes of seasonal respiratory allergy in the Mediterranean area.\(^1,7\)

Sensitization to olive pollen normally varies between 5–40 % in olive pollen areas.\(^1\)

More than 70 % of patients with sensitization to olive pollen have IgE antibodies to Ole e 1. The frequency of sensitization to Ole e 7 and Ole e 9 varies strongly between different areas (0–50 %).\(^1,7\)

Sensitization to the cross-reactive allergens profilin, polcalcin and CCD is usually less frequent (<20 %).\(^1,7,8\)

Ole e 7 is a non-specific lipid transfer protein (nsLTP) with limited homology and cross-reactivity to other nsLTPs.\(^8,11\)

The allergen composition of olive pollen extracts for SIT may vary significantly from producer to producer, especially with respect to Ole e 7 and Ole e 9.\(^2,10\)

Allergy diagnosis in patients exposed to multiple pollen species is complex and misdiagnosis is often a cause for unsuccessful specific immunotherapy treatment.\(^4,10,12\)

Up to 30 % of patients suffering from pollinosis simultaneously present allergy to vegetables.\(^4,7\)

Olive pollen allergy is common while olive fruit allergy is extremely rare.

Ole e 1 is also a marker for sensitization to ash pollens, as well as privet, and lilac pollens since they are closely botanically related.\(^3,5,8,9\)

The ash pollen season overlaps with the birch pollen season in many areas. By testing with Ole e 1 and Bet v 1 (major birch pollen allergen) one can identify the true cause of the reaction.\(^5,6\)
Identify primary sensitizations and understand cross-reactivity between different pollens in order to:

- Facilitate identification of patients and selection of appropriate extracts for immunotherapy.\textsuperscript{10,12}
  - Indications for SIT should be based on documented sensitization to specific olive pollen components.
  - Ideally the SIT extract should contain high concentrations of the matching olive pollen components.

**Benefits for the patient and patient management:**
A well-founded olive pollen diagnosis and proper immunotherapy can:

- Reduce allergic symptoms
- Improve the quality of life

Find out more about olive pollen allergy to improve patient management
Make a precise assessment
ImmunoCAP® Allergen components help you differentiate between "true" allergies and cross-reactivity

Make a substantiated decision
A better differentiation helps you give relevant advice and define the optimal treatment

Make a difference
More informed management helps you improve the patient’s well-being and quality of life

References:

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