u.a. Ambrosia

Sensibilisierung gegen Allergene mit potentieller Ausbreitung durch den Klimawandel: Eine Patientenstudie in zwei Bundesländern mit unterschiedlichem Regionalklima.

- Studiendesign und Methoden: Ambrosia-Treffen im September 2013 in Berlin
- **Ergebnisse Ambrosia-Sensibilisierung**

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Vorgehen

✓ Patienten mit allergischen Beschwerden aus zwei Bundesländern mit unterschiedlichem Regionalklima

- Nordrhein-Westphalen
- Bayern

- pro Zentrum 476 Patienten

- Studieneinschluss 2011- 2013

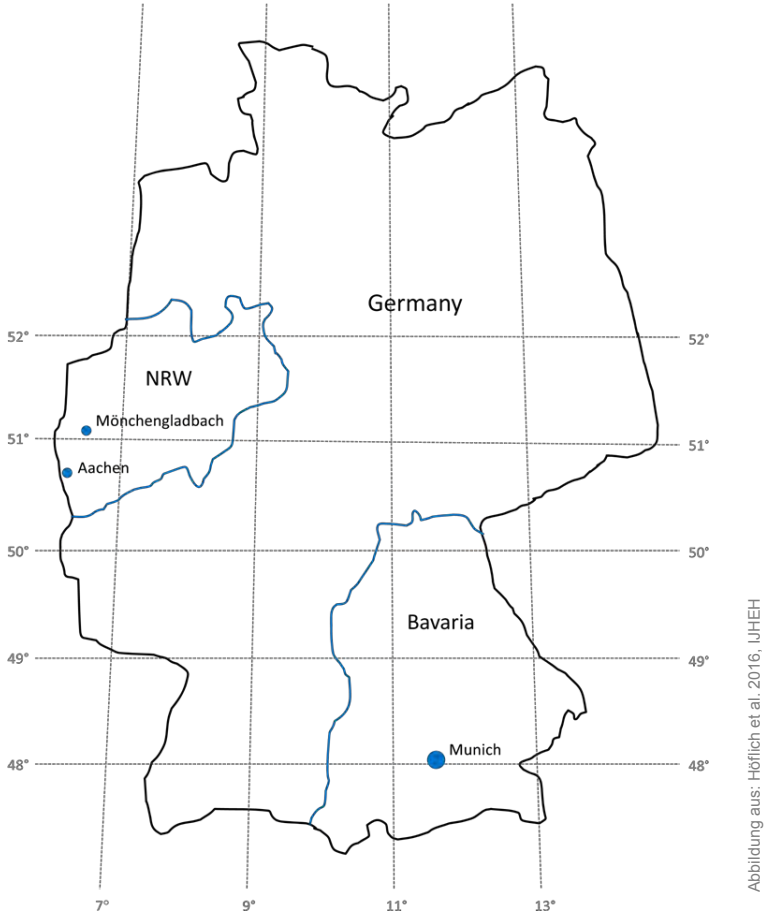


Abbildung aus: Höflich et al. 2016, IJHEH

Vorgehen

✓ Vergleich der allergischen Sensibilisierung

gegen

- einheimische Allergene wie Birke
- neue Allergene wie Ambrosia
- klimawandelbedingt zu erwartende neue Allergene wie Olive

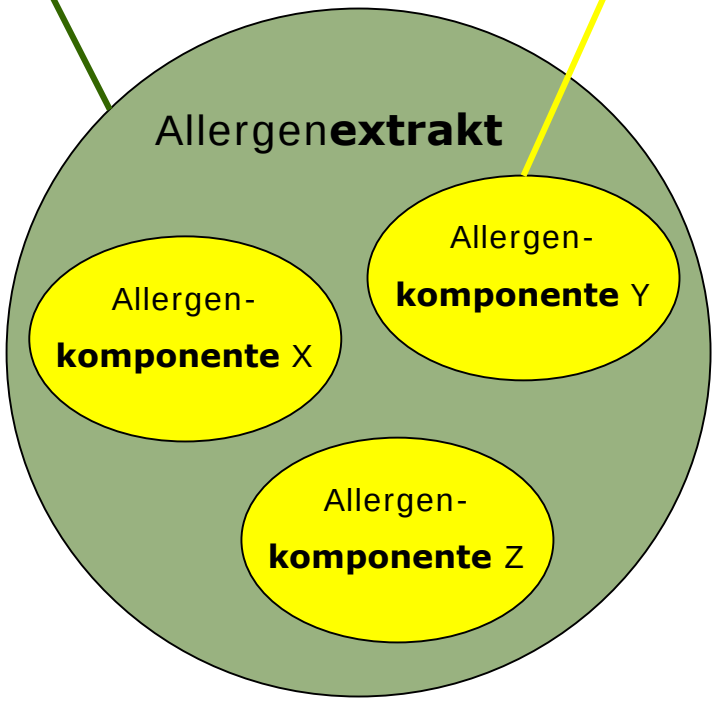
mittels

- Pricktestung
- Messung allergen-spezifischer IgE-Spiegel im Blut

➢ Pricktestung

➢ Messung allergen-spezifischer IgE-Spiegel im Blut

➢Ambrosia



Allergenextrakt:

ALK-Abelló

„echte“/ primäre Sensibilisierung

und

Kreuz-sensibilisierung

sIgE (ISAC):

Amb a 1

„echte“/ primäre Sensibilisierung

Ergebnisse Ambrosia-Sensibilisierung

- Sensibilisierungen gegen Allergen**extrakt**

Pricktest positiv gegen	NRW (%)		Bavaria (%)	p	OR (95% CI)
Ambrosia	18	>>	11	0.001	0.54 (0.37–0.78)

- *nicht* verursacht durch Sensibilisierung gegen Pollen-pan-Allergenkomponenten

Pricktest positiv gegen	NRW (%)		Bavaria (%)	p	OR (95% CI)
Ambrosia	10	>>	5	0.001	0.48 (0.28–0.83)

- *nicht* verursacht durch “non-exposure”-Variablen wie Geschlecht, Leben in einer Großstadt, Bildung etc.:

Pricktest positiv gegen	NRW (%)		Bavaria (%)	OR (95% CI)	aOR (95% CI)
Ambrosia	19	>>	11	0.56 (0.38–0.83)	0.54 (0.36–0.82)

- Sensibilisierungen gegen **Amb a 1**:

	sIgE gegen Amb a 1			
Pricktest positiv gegen	NRW % (n/n)	Bavaria % (n/n)	p	OR (95% CI)
Ambrosia	0 (0/87)	2 (1/50)	0.310	5.30 (0.21–132.67)

Diskussion Ambrosia-Sensibilisierung

- reduzierte Sensitivität der ISAC-Technologie?

- in NRW und Bayern sehr niedrige Rate an Patienten mit primärer Sensibilisierung

  - regionaler Ambosia-Pflanzenbestand
  - regionale Ambrosia-Pollenlast
  - Reiseaktivitäten

primäre Ambrosia-Sensibilisierung

- über Kreuzreaktionen könnte jeder fünfte Patient in NRW und jeder zehnte Patient in Bayern eine Typ-1-allergische Reaktion nach Kontakt mit Ambrosia zeigen

- alle Daten publiziert 2016 in *International Journal of Hygiene and Environmental Health*

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Potential health risk of allergenic pollen with climate change associated spreading capacity: Ragweed and olive sensitization in two German federal states

open access

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ABSTRACT

Background: Global climate changes may influence the geographical spread of allergenic plants thus causing new allergen challenges.
Objective: Allergy patients from two German federal states were compared for their status quo sensitization to ragweed, an establishing allergen, olive, a non-established allergen, and the native allergens birch, mugwort, and ash.
Methods: Between 2011 and 2013, 476 adult allergy patients per region were recruited. Patients completed a questionnaire, participated in a medical interview, and underwent skin prick testing and blood withdrawal for analysis of specific IgE to allergen components (ISAC technology). Data on regional pollen load from 2006 to 2011 were acquired from the German Pollen Information Service Foundation.
Results: Prick test reactivity to ragweed and ash, respectively, was lower in Bavaria than in NRW (ragweed: $p = 0.001$, aOR = 0.54; ash: $p = 0.001$, aOR = 0.59), whereas prick test reactivity to olive was higher ($p = 0.000$, aOR = 3.09). Prick test reactivity to birch and mugwort, respectively, did not significantly differ. 1% (1/127) of patients with prick test reactivity to ragweed showed sIgE to Amb a 1, and 65% (86/132) of olive-but-not-ash reactive patients showed sIgE to Ole e 1 (NRW: 67%, Bavaria: 65%; $p = 0.823$, OR = 0.91). Regional differences in sensitization pattern were neither explainable by cross-reactivity to pollen pan-allergens nor non-exposure variables nor by reported plant population or pollen data.
Conclusions: Spread of ragweed and particularly olive may result in prompt occurrence of allergic symptoms. Early identification of invasive allergens due to climate change does need time and spatial close meshed measurement of respective indicator allergens and sensitization pattern.

Abbreviations: CO_2, carbon dioxide; NRW, North Rhine-Westphalia; IgE, immunoglobulin E; sIgE, specific IgE; DEGS1, first wave of the German Health and Interview Survey for Adults; UBA, German Federal Environment Agency; GA²LEN, Global Allergy and Asthma European Network; SBE, standardized biological units; IR, index of reactivity; G/V, weight/volume; ISAC, Immuno Solid-phase Allergen Chip; ISU, ISAC-standardized units; n.a., not analyzed; n/a, not applicable; PID, German Pollen Information Service Foundation; CASMIN, Comparative Analysis of Social Mobility in Industrial Nations; OR, odd's ratio; CI, confidence interval; min, minimum; max, maximum.

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