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Assessing the compliance & persistence of allergen immunotherapy in allergic rhinitis using a retrospective pharmacy database from The Netherlands

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I. Introduction

ALLERGIC RHINITIS & ALLERGEN IMMUNOTHERAPY



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Allergic rhinitis

- More commonly known as 'hayfever', but also including hypersensitivity to house dust mites
- Not restricted to nasal complaints**, but also potential other symptoms: eyes, lungs ("allergic asthma"), **chronic fatigue & concentration problems**, sleeping disturbance
- Approx. 20% of Europeans affected, more in urban areas
- Significant expense, both prescription and OTC drugs which **suppress symptoms**.
- Also: preventive "vaccination" using **allergen immunotherapy**; well established and part of Dutch basic benefits package



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Allergen immunotherapy

- Basic idea: desensitize immune system for **3 yrs** by administering extract(s) of the offending allergen(s)
- Routes of administration:
 - sublingual (SLIT): **daily drops or tablets under tongue in domestic setting**
 - subcutaneous (SCIT): **monthly injections arm(s)/leg(s) in clinical setting**
- Safe, but side effects do occur (especially in SCIT). Effectiveness heavily dependent on compliance & persistence
- Total costs of allergen immunotherapy in Netherlands (2010): **€45M/yr.**



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II. Methods

PHARMO® DATABASE & SAS® MACRO



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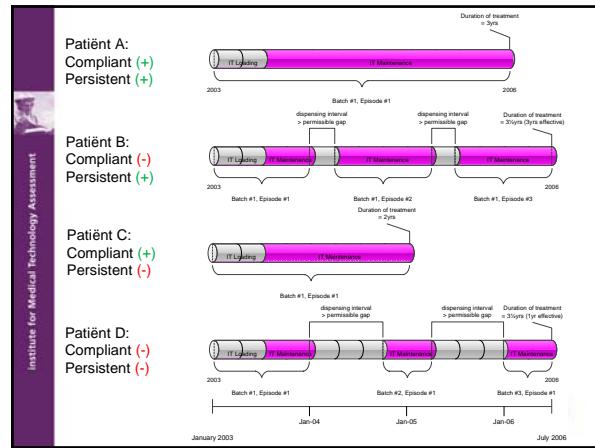
PHARMO® database

- The PHARMO® Record Linkage System (RLS) contains pharmacy drug dispensing records collected from over 200 pharmacies throughout NL, **2 million subjects**
- Data extraction based on WHO-ATC code for allergen immunotherapy, yielding **pharmacy visiting dates** and **drug/prescriber/cost info** of:
 - 8996 adult patients taking
 - SCIT and/or SLIT against grass/tree pollen, mites
 - from 1994 through 2009
- PHARMO records linked to **SCP database** for background info on sex, age, SES, geographic location etc.



Database analysis

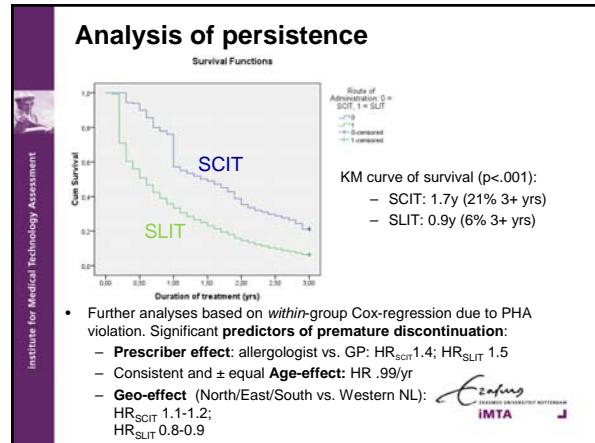
- A SAS® macro was obtained, constructed by Catalan & LeLorier for the analysis of long-term persistence in statin use (Catalan & LeLorier, VtH Nov 2000)
- Macro adapted for use of analysis in allergen immunotherapy:
 - persistence** (duration of treatment, target: 3yrs)
 - compliance** (# missed pharmacy visits)



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III. Results

ANALYSIS OF COMPLIANCE & PERSISTENCE



Noncompliance (costs of nonpersistence)

- Compliance seems decent, but only measured in persistent patients. In line with literature on the subject.
- Only about **6% of SLIT users** and **21% of SCIT users** achieve a minimum total treatment duration of 3 yrs, though **hazard rate of RoA** (SCIT vs. SLIT) itself **hard to predict** due to violation of PHA.
- Though easy to use, daily SLIT treatment seems hard, monthly SCIT treatment preferred, and, in these long and intensive treatments, GP care is preferred over specialist outpatient care
- **Costs of nonpersistence are impressive**, but are not completely forgone: some long-term effects on symptoms may certainly be expected, but **discounting is problematic**.


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