

Wheat allergen exposure and the prevalence of work-related sensitization and allergy in bakery workers.

Original Article

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Abstract:

Background: Occupational airway diseases are common among bakers. The present study describes the association between exposure to wheat allergen levels and sensitization to wheat allergens, work-related upper and lower respiratory symptoms and asthma in bakery workers.

Methods: As part of a Health Surveillance System for early detection of (allergic) occupational airway diseases a so-called 'validation study' was performed among Dutch bakers for validation of a diagnostic model that predict the likelihood of sensitization to specific workplace allergens. The present study used serology and questionnaire results of a subgroup of 860 bakers participating in the validation study. An earlier developed job-exposure matrix was used to predict average and cumulative personal exposure to wheat allergens.

Results: The prevalence of wheat sensitization, work-related respiratory symptoms and asthma increased till average wheat exposure levels of approximately 25-30 [μ g/m³], leveled off and decreased at higher exposure concentrations. Exposure-response curves showed a stronger pronounced bell-shape with cumulative exposure. Associations were strongest for asthma and work-related lower respiratory symptoms (PR~2 and PR~3.5-4.5 for average and cumulative exposure, respectively). Associations were only found in atopics. Wheat sensitization was an important factor in the prevalence of respiratory symptoms.

Conclusion: In accordance with earlier studies, the present study showed a bell-shaped exposure-response relationship especially for cumulative wheat allergen exposure with sensitization, allergic respiratory symptoms and asthma. The healthy worker effect may be the possible explanation for the bell-shaped relationship.

Diakses dari: <http://pt.wkhealth.com/pt/re/algy/abstract.00000381-200812000-00004.htm;jsessionid=KgMhsS5JNB1yhsFcBY6q6p1rLMVLBGjD0j0yvs75HXL1Kpzl5cXj!-1301340472!181195628!8091!-1>