The prevalence and risk factors of contact allergy in the adult general population

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ABSTRACT

This PhD project had two aims: 1) to estimate the overall prevalence of contact allergy among adults from the general population in Denmark. 2) to investigate whether alcohol consumption and tobacco smoking affect the prevalence of contact allergy.

Two different approaches were used to estimate the prevalence of contact allergy: 1) A simple mathematical approach named the Clinical Epidemiology and Drug Utilization Research (CE-DUR) method used patch test data from dermatitis patients (n=14.284) tested within the Danish Contact Dermatitis Group during 2001-2005 in combination with patch test sales data from 1996-2005 to estimate the 10-year prevalence of contact allergy among adult Danes. 2) Results of a large cross-sectional patch test study performed in adult volunteers from the general population in Copenhagen between 2006 and 2008. Participants (n=3460) were patch tested with TRUE-tests and readings were done on day 2. As a cross-sectional patch test study using similar methods was also performed in 1990 (n=543), the development in the prevalence of contact allergy could be assessed. A possible effect of alcohol consumption on the prevalence of contact allergy was investigated by using questionnaire data from the 1990 (n=1056) and 2006 (n=3460) studies, and by using follow-up data from a similar patch test study performed in 1998 (n=734) 69% participants from 1990 were patch tested again. Finally, an association between tobacco smoking and contact allergy was investigated by using questionnaire and patch test data from the 2006 study.

The CE-DUR method estimated that the 10-year prevalence of contact allergy ranged between 7.3% and 12.9% among adult Danes (>18 years). Based on German experience, the worst case scenario may reveal the most accurate estimate, i.e. 12.9%. Despite inherent inaccuracies of the CE-DUR method, it may work as a rapid and inexpensive way to monitor the prevalence of contact allergy in the general population. The 1990 and 2006 patch test studies found that the overall prevalence of contact allergy among 18-69 yearolds decreased from 15.5% in 1990 to 10.0% in 2006 ($p<0.001$). This was mainly explained by a decrease in thiomersal-, cobalt-, Myroxylon Pereirae- and rubber allergy. The decrease of thiomersal allergy may be explained by the removal of this ingredient from vaccines in Denmark. Tobacco smoking was significantly associated with contact allergy and nickel allergy ($p_{trend}<0.05$). In contrast, there was no clear association between alcohol consumption and contact allergy, although the 8-year incidence of contact allergy tended to be inversely associated with alcohol consumption in women ($p_{trend}=0.045$).

ABSTRACT OF DISSERTATION

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