

non-right-handed persons with asthma finally turned out to have a different prognosis, this would lead to a further understanding of mechanisms and genes underlying the disease of asthma and other immune disorders.

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References

1. BURNEY PG, LUCZYNSKA C, CHINN S, JARVIS D. The European Community Respiratory Health Survey. *Eur Resp J* 1994;7:954–960.
2. GAILLARD F, SATZ P. Handedness and reading disability: a developmental study. *Arch Clin Neuropsychol* 1989;4:63–69.
3. STANTON A. *Glantz. Primer of Biostatistics*, 2nd edn. New York: McGraw-Hill, 1987.
4. SMITH J. Left-handedness: its association with allergic disease. *Neuropsychologia* 1987;25:665–674.
5. KROMMYDAS GC, GOURGOULIANIS KI, ANDREOU G, MOLYVDAS PA. Left-handedness in asthmatic children. *Pediatr Aller Immunol* 2003;14:234–237.
6. KROMMYDAS GC, GOURGOULIANIS KI, ANGELOPOULOS NV, ANDREOU G, MOLYVDAS PA. Left-handedness and parental psychopathology in the course of bronchial asthma in childhood. *Pediatr Asthma Allergy Immunol* 2002;15:145–152.
7. NEVEU PJ. Asymmetrical brain modulation of the immune response. *Brain Res Rev* 1992;17:101–107.

Occupational asthma due to pork antigens

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Key words: occupational asthma; asthma.

We describe two cases of occupational asthma (OA) in workers processing pork meat confirmed by specific inhalation

challenges. Animal proteins are a part of the high-molecular weight agents that frequently causes OA (1). In the pork animal, swine confinement facility workers often develop respiratory problems (2, 3) these complaints are less frequent in meat pork-processing plants where the environmental conditions are different. The following report describes two cases of (OA) pork antigen in a meat pork industry.

Both cases were male (33 and 49 years.), atopic and employed in a meat pork-processing plant for 1 and 11 years (subjects A and B) with no previous history of atopy. They were working on the production line, cutting up quarters of pork. After 6 months (subject A) and 11 years (subject B), both developed cough and attacks of wheezing and dyspnea, after starting work on the production line and getting worse at the end of the day. When seen in the clinic, both had been off work for several weeks and almost asymptomatic. Both subjects had a positive skin-prick test (10 and 5 mm) to an extract of pork meat antigen (Hollister-Stier Laboratories, Spokane, WA, USA). Subject A had normal forced expiratory volume (FEV₁, 4.85 l) and borderline bronchial responsiveness with PC₂₀ methacholine of 8.65 mg/ml. A bronchial challenge with nebulized pork meat antigen elicited an early response with 30% fall in FEV₁ and no change in PC₂₀ (Fig. 1). Subject B had also a

Pork antigen can cause occupational asthma through an apparently Ig-E mediated mechanism as evidenced by immediate skin reactivity reaction to the pork extract.

normal FEV₁ (3.14 l) and mild bronchial hyperresponsiveness (PC₂₀ 5 mg/ml). Monitoring of FEV₁ at work confirmed the diagnosis of OA with an early response (FEV₁ fell by 24% after 45 min of exposition with recovery over 2 h). Patients were removed from their workplace with improvement in their symptomatology.

Those cases reports show that pork antigen can cause OA through an apparently IgE-mediated mechanism as evidenced by immediate skin reactivity reaction to the diluted pork extract. These subjects also presented symptoms of occupational rhinoconjunctivitis, which is commonly encountered in the case of high-molecular weight agents (4). First case of asthma because of occupational exposure to pigs was reported in 1981 (5). In that case, OA was proved with an inhalation challenge of an extract of pig's urine. PausJenssen and co-workers (6) indeed described an interesting case of OA in a meat pork-processing plant as a result of type-I hypersensitivity and protein contact dermatitis because of type-IV hypersensitivity caused by pork in the same individual. In conclusion pork antigen in workers can give different forms of protein sensitization.

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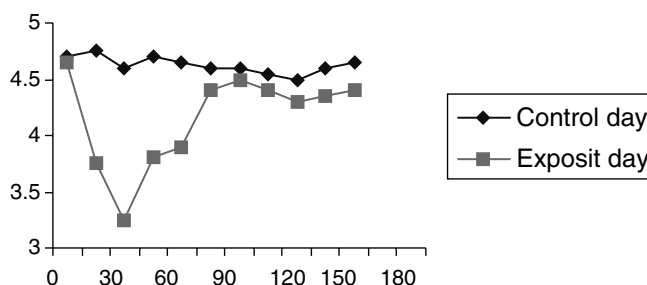


Figure 1. A bronchial challenge with nebulized pork meat antigen elicited an early response with 30% fall in forced expiratory volume 1.

References

1. BERNSTEIN DI. Occupational asthma. *Med Clin North Am* 1992;**76**:917–934.
2. CORMIER Y, BOULET LP, BEDARD G, TREMBLAY G. Respiratory health of workers exposed to swine confinement buildings only or to both swine confinement buildings and dairy barns. *Scand J Work Environ Health* 1991;**17**:269–275.
3. VON ESSEN S, DONHAM K. Illness and injury in animal confinement workers. *Occup Med* 1999;**14**:337–350.
4. MALO JL, LEMIERE C, DESJARDINS A, CARTIER A. Prevalence and intensity of rhinoconjunctivitis in subjects with occupational asthma. *Eur Respir J* 1997;**10**:1513–1515.
5. HARRIES MG, CROMWELL O. Occupational asthma caused by allergy to pigs' urine. *British Medical Journal* 1982;**284**:867.
6. PAUS JENSSEN ES, COCKCROFT DW, HULL PR. Occupational asthma and protein contact dermatitis caused by pork in the same individual. *Can J Allergy Clin Immunol* 2002;**7**:50–52.