IGE ANTIBODIES TO SWINE ANTIGENS IN THE SERA OF PORK PROCESSORS

By Toni A. Bledsoe, M.S., M.T. (A.S.C.P.), Daniel M. Lewis, Steven W. Lenhart
NIOSH, Division of Respiratory Disease Studies, Morgantown, West Virginia
Sherry L. Baron
NIOSH, Division of Surveillance, Hazard Evaluations and Field Studies, Cincinnati, Ohio

As part of an investigation of respiratory illness among workers at a pork processing facility, we obtained serum samples from 37 workers and bulk samples of substances to which the workers were exposed. The serum samples were analyzed for total IgE content by a commercial radioimmunoassay (PRIST), and for specific IgE antibodies by the radioallergosorbent test (RAST) using extracts of swine urine, serum, blood, and dander coupled to cyanogen bromide--activated cellulose beads. A sample was considered positive if the binding to the antigen-coated beads was at least twice the binding to human serum albumin-coated beads. By this criteria, IgE antibodies to one or more antigens was detected in 28 (75.7 percent) of the sera tested. All 28 sera reacted with the whole blood extract, while 16 reacted with the dander, 10 with the urine, and 8 with the serum. No correlation between the total IgE content and specific IgE antibodies was observed. By questionnaire, 25 of the subjects were symptomatic for respiratory disease; 14 of these subjects had abnormal serial peak flow measurements. The antibody data was analyzed with respect to the symptoms and peak flow finding, and revealed that 9 of 14 (64 percent) symptomatic with abnormal peak flow measurements had IgE antibodies while 10 of 11 (91 percent) of symptomatic with normal peak flow measurement had IgE antibodies. These results demonstrate that pork processing workers develop IgE antibodies to swine antigens, and that antibody activity may correlate with symptoms but not impaired pulmonary function.

PAPERS AND PROCEEDINGS

of the

SURGEON GENERAL'S CONFERENCE ON

AGRICULTURAL SAFETY AND HEALTH

Edited by:

Melvin L. Myers, M.P.A.

Robert F. Herrick, Sc.D.

Stephen A. Olenchock, Ph.D.

John R. Myers, M.S.F.

John E. Parker, M.D.

David L. Hard, Ph.D.

Katherine Wilson, M.P.H.

Public Law 101-517

April 30 - May 3, 1991
Des Moines, Iowa

Convened by

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

September 1992

DISCLAIMER

Sponsorship of this Conference and these *Papers and Proceedings* by the National Institute for Occupational Safety and Health (NIOSH) does not constitute endorsement of the views expressed or recommendations for use of any commercial product, commodity, or service mentioned. The opinions and conclusions expressed in the papers and abstracts are those of the authors and not necessarily those of NIOSH.

Recommendations are not to be considered as final statements of NIOSH policy or of any agency or individual who was involved. They are intended to be used in advancing the knowledge needed for improving worker safety and health.

Publication Dissemination, DSDTT
National Institute for Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, Ohio 45226
FAX (513) 533-8573

U.S. Department of Commerce
National Technical Information Services
Springfield, VA 22161
NTIS PB 93-114890/$77.00 or A/06

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
GPO 017-033-00463-3

DHHS (NIOSH) PUBLICATION NUMBER 92-105

For information on other occupational safety and health problems, call:
1-800-35-NIOSH