CORRESPONDENCE

Mortality of workers exposed to methylene chloride employed at a plant producing cellulose triacetate film base

EDITOR—Tomenson et al reported results from a cohort study of men exposed to methylene chloride in the manufacture of cellulose triacetate fibers. One of the findings in the study was four observed deaths from brain and other central nervous system (CNS) tumors compared with 2.8 expected cases based on national mortality rates. This is an interesting finding, as Heineman et al previously reported an association between methylene chloride and brain and astrocytic brain cancer in a case-control study of men from southern Louisiana and northern New Jersey who had died. However, Tomenson et al discussed this finding as two of their cases had “minimal exposure to methylene chloride”. They furthermore argued that “no support for an association between methylene chloride and brain cancer was provided by the other three retrospective cohort studies”. However, only one of the three studies that excluded workers exposed to methylene chloride reported data on brain cancer. Hearne et al found two observed deaths from brain cancer compared with 1.7 expected based on reference rates from New York State, excluding New York City, and 2.0 expected based on interval rates from Kodak, Rochester. Brain cancer data were not reported in the studies by Lanes et al and Gibbs et al. The four other available cohort studies that included workers exposed to methylene chloride also did not report data on brain cancer. It would have been prudent for Tomenson et al to bring to the attention of the reader the lack of data on the association between methylene chloride and brain cancer. Not supported is different from not reported!

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Authors’ reply—Lyenge is correct to point out that Gibbs et al and Lanes et al did not report brain cancer mortality in two cohorts of United States cellulose triacetate fibre workers in Cumberland, Maryland, and Rock Hill, South Carolina. At the time of writing our paper, the paper by Gibbs et al had not been published. However, we had access to a more detailed report of the mortality experience of workers at the Cumberland facility. For comparison purposes, Gibbs’ also reports some mortality findings for workers at the Rock Hill factory. When the paper of Gibbs et al was published, we removed the reference to the unpublished report. Unfortunately we overlooked the fact that the published paper did not include the brain cancer findings which we now give.

Gibbs et al and Gibbs’ reported mortality results for workers in two groups exposed to methylene chloride. Among workers in the high exposed group (530–700 ppm) there was one death from cancer of the central nervous system (CNS) (2.01 expected) and three deaths from cancer of the CNS (2.54 expected) in the low exposed group (50–100 ppm). Exposure levels of workers in the Rock Hill cohort studied by Lanes et al were similar to those of workers in the Cumberland cohort, but it was not possible to separate them into exposure categories. There was one death from cancer of the CNS (1.52 expected) in the Rock Hill workers. Hence these studies do not provide support for an association between methylene chloride and brain cancer. However, we apologize for not ensuring that readers had access to the relevant data.

When discussing the supporting evidence for an association between brain cancer and exposure to methylene chloride, we focused on the information provided by the four cohorts of workers producing cellulose triacetate fibres or film base. These workers had high and well-characterized exposure to methylene chloride compared with workers in the four other cohort studies cited by Lyenge, which did not report brain cancer mortality, but they have limited relevance to an assessment of the human health effects of exposure to methylene chloride.

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Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners by e hinzdj, j murray (1998;55:496–502). The cumulative dust exposure measurements given in this paper were in units of g/m² and not in mg/m³ as incorrectly stated. The cumulative dust exposure in g/m² units was calculated as a sum of products between the number of shifts spent in an occupational category, the average number of hours spent underground in the occupational category, and the average respirable dust concentration (mg/m³) for the occupational category. To convert the cumulative dust from g/m² to mg/m³ one needs to multiply the average

exposure of 14.3 given in the paper by 1000
and divide by (270 ÷ 8) to obtain 6.6 mg/m³.

We are grateful to Professor HJ Woitowitz
from the Institute of Work and Social
Medicine in Giessen, Germany, for pointing
out this error.

NOTICES

International Course of Molecular
Epidemiology. 19-24 April 1999, Villa
Gualino, Torino, Italy.

The Institute for Scientific Interchange
Foundation, the International Agency for
research on cancer, the University of Torino,
the Centre for Oncologic Prevention, and the
Italian Molecular Epidemiology Group are
running this course.

Keynote lectures
- Current perspectives in cancer research
- and prevention
- The aetiology of common diseases and
- their pathogenetic pathways

Session 1—molecular dosimetry:
techniques and methods
- DNA adducts and protein adducts
- From addition to DNA damage

Session 2—genetic susceptibility
- high and low penetrance cancer genes
- metabolic polymorphisms
- DNA repair

Session 3—epidemiological methods
- Study design: transitional and formal stud-
ies
- Case-control, cohort studies
- Bias, confounding, and effect modification

Session 4—DAN damage
- Acquired mutations and mutational spectra
- Cytogenetic damage

Session 5—statistical analysis
- Exploratory data analysis
- Univariate analysis
- Multivariate analysis

Session 6—issues in molecular
epidemiology
- Ethical aspects
- Combined evidence, meta-analysis
- Causality assessment

Course directors: P Vineis (Torino), P
Boffetta (Lyon). Faculty (provisional list): N
Rothman (Bethesda), M Berwick (New
York), D Phillips (Sutton), M Ingelman-
Sundberg (Stockholm), F Real (Barcelona),
P Hainaut (Lyon), R Montesano (Lyon)
Keynote speakers: P Kleihues (Lyon), P Per-
era (New York)
No registration fee is required. The ISI
Foundation has reserved single rooms for
participants from April 18 to 24 at Villa
Gualino. The full board package is ITL.
780.000. Deadline for registration: 28, Feb-
ruary 1999
For information contact: ISI Secretariat,
Villa Gualino, Viale Settimio Severo 65,
Torino, Italy. Tel 0039 11 6603090, fax 0039
11 6600459; email: isi@isi36a.isi.it - www
isi.it

EPICOH 14th International Conference
on Epidemiology in Occupational
Health. Herzlia, Israel. 10-14 October
1999.

The ICOH together with the Occupational
Health and Rehabilitation Institute in Israel
is organising the EPICOH 14th International
Conference on Epidemiology in Occupa-
tional Health.

The main topics of the conference are:
- Occupational work related diseases
- Occupational cancer
- Occupational epidemiology
- Molecular epidemiology
- Biological markers
- Value of pre-employment examinations
- Exposure assessment
- Reproductive health studies
- Communicable diseases

For information contact: Dr Judith Shaham,
Occupational Health and Rehabilitation Insti-
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771 0092; fax 00 972 9 771 2212; email
judiths@trendline.co.il

International Conference on The
Combined Effects of Environmental
Factors ICCEF 2000. 26-29 August 2000,
Savonlinna, Finland.

The 9th international conference on the
combined effects of environmental factors
will take place in Savonlinna, in the beautiful
eastern lake area of Finland. The conference
is organised under the auspices of the
International Society of Complex Environ-
mental Studies (ISCES) in cooperation with
national and international research institutes
and universities.

The ICCEF 2000 invites all scientists who
are interested in basic or applied studies
related to complex interactions and com-
bined effects of physical, chemical, psychoso-
cial, and biological environmental factors on
human health and wellbeing, or on biological
systems. Contributions cover the following
main subject areas Complex Environmental
Studies, Combination Epidemiology, Combin-
tion Toxicology, Combined Mutagens, Genotox-
ins, Carcinogens and Teratogens, Combined
Environmental and Psychosocial Factors, Psy-
chophysiological Studies on Combined Environ-
mental Factors, Methodological Issues and Com-
puter Simulation as well as Modelling. The
programme will include introductory lec-
tures, oral and poster presentations. The
working language of the Conference is
English.

Further details from: Dr Olavi Manninen,
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