

Preface

Scand J Work Environ Health 1998;24 suppl 2:3—4

Acrylonitrile is an important industrial chemical to which many thousands of people have been, and continue to be, occupationally exposed. It has been shown to cause cancer in animals and, in 1979, was classed by the International Agency for Research on Cancer as a chemical that "should be regarded as if it were carcinogenic to humans". The human evidence, which pointed to possible risks of cancer of the lung and colon (1), was, however, limited to very small numbers and was exceptionally weak, and it was still weak, though based on larger numbers and pointing to possible risks of cancer of the lung and prostate, when the Agency reviewed its evaluation in 1987. No change was made, and acrylonitrile continued to be classed as a probable human carcinogen (category 2A).

With so many people exposed, even if only to the very small amounts to which exposure had been reduced when it was realized that acrylonitrile could cause cancer in animals, the situation is unsatisfactory, for it remains unclear whether acrylonitrile is, in fact, a human carcinogen and, if it is, how great the risk is likely to be for any given level of exposure. The risk to which workers have been exposed cannot be large, and it is unlikely that any one study could be big enough to provide a clear answer. When, therefore, it was realized that 4 cohort studies of occupationally exposed workers were nearing completion in The Netherlands, the United Kingdom, and the United States (independently by research staff of the National Cancer Institute and the DuPont Company), it seemed that it might be helpful if the results of all the studies could be presented at a meeting at which the differences between the groups could be discussed and the possibility considered of pooling the data to provide a more effective overview.

A meeting was, therefore, held in Green College, Oxford, on 26, 27 and 28 August 1997, under the auspices of the College, with funds provided by the Acrylonitrile Group in the United States and the CEFIC Acrylonitrile Producers Association, Sector Group within the European Chemical Industry Council in Europe. It was attended by the principal investigators responsible for the cohort studies, other academics with special interest in occupational medicine, and representatives of regulatory bodies, industry groups, and labor unions. Eight papers were presented, embracing reviews of the toxicologic evidence and of the methods of assessing exposure, reports of the 4 major cohort studies, an overview of reports of other studies, and an assessment of the conclusions drawn by 2 independent academics. Ample time was allowed for discussion, and the papers presented in this special issue have been modified by the authors as appropriate in response to scientific criticisms made at the meeting and subsequently to the comments made by the Journal's referees. A ninth paper, describing the detailed methodology used to assess exposure in the study of the National Cancer Institute, was not presented at the meeting, but has been included for clarification.

In conclusion, as Chairman of the small group responsible for organizing the meeting, I should like to express our appreciation for the efforts made by the investigators to complete their work on time for its presentation at the meeting and for the contribution of all the discussants. I should like also to thank the industry group for the funds that enabled the meeting to be held and the Warden and Fellows of Green College for making their premises available. I hope that the scientific community interested in occupational medicine will find the results of practical use.

References

1. US Department of Labor. Occupational exposure to acrylonitrile (vinyl cyanide): proposed standard and notice of hearing. Fed Regis 1978;43:2586—621.
2. International Agency for Research on Cancer (IARC). Acrylonitrile, acrylic and modacrylic fibers, and acrylonitrile-butadiene-styrene and styrene-acrylonitrile co-polymers. Lyon: IARC, 1979:73—113. IARC monographs on the evaluation of the carcinogenic risks of chemicals to humans, vol 19.
3. International Agency for Research on Cancer (IARC). Overall evaluation of carcinogenicity: an updating of the IARC monographs volumes 1 to 42. Lyon: IARC, 1987:79—80. IARC monographs on the evaluation of the carcinogenic risks of chemicals to humans, suppl 7.

Sir Richard Doll
Clinical Trial Service Unit & Epidemiological Studies Unit
University of Oxford
Harkness Building
Radcliffe Infirmary
Oxford OX2 6HE, United Kingdom