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EPA WORKSHOP SETS STAGE FOR RESOLVING ASBESTOS IN DRINKING WATER CONTROVERSY

The U.S. Environmental Protection Agency (EPA) has started its decision making process to determine whether asbestos in drinking water should or should not be regulated under the Safe Drinking Water Act. The announcement came at the closing of the agency's Summary Workshop on Ingested Asbestos held at the Breidenbach Environmental Research Center.

The purpose of the Summary Workshop was to gather and evaluate EPA-sponsored studies on exposure/potential health effects of ingested asbestos. Ten years of research in human and animal toxicology, epidemiology, physiology, and pathology and in vitro studies were reviewed by scientists from government and academia. Workshop proceedings will be published in the October, 1983 issue of Environmental Health Perspectives. Here are some highlights.

NIEHS Studies of Orally Administered Asbestos

Eugene McConnell, M.D. of the National Institute of Environmental Health Sciences (NIEHS) reported the long awaited findings of its seven year animal feeding studies. The first phase, whose conclusions were released in 1981, demonstrated no carcinogenic or cocarcinogenic effects from lifetime feeding of asbestos to hamsters.

The second phase, involving over 5,000 rats, was considered the definitive study for determining neoplastic and non-neoplastic effects from oral administration of asbestos. Dose levels were 1% of total diet by weight.

Dr. McConnell reported that histopathologic analysis of test animals fed crocidolite and chrysotile asbestos for their lifetimes showed no carcinogenic effects. The lifespans of rats fed asbestos also were not shortened, nor were there any increased incidences of non-neoplastic disease such as gastrointestinal inflammation, diverticulitis, ulcerations, etc. McConnell characterized the seven year study as "one of the best I have ever dealt with."

The NIEHS data will be peer reviewed by the Board of Scientific Counselors and formally released sometime in 1983.

Case Control Epidemiologic Study - Puget Sound

Preliminary results were reported by Dr. Lincoln Polissar of the Fred Hutchinson Cancer Research Center. The research, as yet unpublished, was a refinement of the census tract epidemiologic study that showed little evidence of cancer risk from asbestos in community water supplies (see A/C Advisory, Volume I, Issue 9). In the hierarchy of studies using human data, a case control study is more powerful than an ecologic or census tract study. It collects data on persons with disease (cancer in this case) and a similar "control" group without disease. Analysis then determines whether persons with disease were more exposed to a potentially causative agent (asbestos in drinking water) than disease-free persons.

The researchers used data in "low migration" census tracts to isolate "eligible" and "control" cases. Each case was then interviewed and personal histories taken to determine historical exposures to asbestos in drinking water. No statistically significant correlations were found between cancer incidence and the concentrations of asbestos in drinking water in the area.

Reanalysis of the San Francisco Bay Area Study

Using sophisticated mathematical techniques for "data image enhancement," a University of California-Berkeley biostatistician reported on an EPA-funded reanalysis of the Kanarek et al epidemiologic study. The study, published in two parts in 1977 and 1980, showed a statistical correlation between certain cancers and asbestos levels in Bay Area drinking water.

Dr. Michael Tarter's analysis of San Francisco census tracts, where asbestos exposure levels were high, actually showed a negative association between asbestos levels and cancer incidence, i.e. incidence rates were lower where exposure was higher. He tagged this observation "the San Francisco effect" and cautioned that until it is fully understood, "one must be very careful about interpreting the Kanarek studies."

Observations by EPA Office of Drinking Water

Dr. Joseph A. Cotruvo (Director, Criteria and Standards Division, Office of Drinking Water) delivered the keynote address. He observed that the debate on the potential risks of asbestos in drinking water had been ongoing since 1971, noting, "very few other issues have had the volume and intensity of study and resultant information that has been presented here."

From his perspective the epidemiological and animal data show "... there is a substantial question as to whether there is risk at all from small amounts of asbestos fibers in drinking water ... if there is a risk, the magnitude of that risk must be quite small at levels typically found in drinking water or perhaps even at atypical levels, such as the 100-million plus fiber per liter concentration."

Cotruvo concluded that no toxic effects were demonstrated in lifetime animal feeding studies. If there was a risk from ingested asbestos, he said, it had not been reproducibly demonstrated by epidemiologic studies.

In reviewing where and how EPA would proceed from the Workshop, he announced that the agency is "on track to make a decision." Extensive additional research probably would not add to the knowledge of the subject and a decision will be made on what evidence is currently available, he said. EPA is expected to issue an Advance Notice of Proposed Rulemaking (ANPRM) in the Federal Register within two to four months. Although the ANPRM encompasses the agency's complete revision of existing National Primary Drinking Water Regulations, additional contaminants, including asbestos, will be mentioned in the ANPRM and public comments solicited.

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