

Talking Points
CMA Study: Vinyl Chloride
Indian Orchard Plant

Background

A study entitled "Epidemiological study of men employed in the vinyl chloride industry between 1942 and 1972," has recently been completed, sponsored by the Chemical Manufacturers Association. This study reports on 10,109 workers from 37 plants throughout the United States and Canada who may have been exposed to vinyl chloride monomer (VCM) and/or polymerized vinyl chloride (PVC) for one or more years between 1942 or 1972. This is the largest group of vinyl chloride workers ever studied and updates an earlier study. The study includes 226 workers from Solutia's Indian Orchard Plant. Solutia is sending an information letter to the participants.

The latest study corrected several errors in a previous study of this group of workers done several years ago. The authors find no increased rates of lung cancer, or cancers of lymphatic and hematopoietic tissue reported in some studies. Contrary to the previous report, there was no elevated rates of emphysema. The earlier study's indication of elevated rates appears to be a result of cases that were classified incorrectly.

As with previous studies of VCM workers, elevated rates of liver cancer, especially angiosarcoma, were reported. Rates of brain cancer which were elevated in an earlier study of this group of workers were not elevated in the people studied for the update. Elevated rates were reported for soft tissue sarcoma, but four out of 12 were angiosarcomas indicating potential misclassification of disease.

The authors conclude that the elevated rates of liver and biliary tumors, brain cancer, and soft tissue sarcoma may have been the result of exposure.

Messages

The Indian Orchard plant stopped making polyvinyl chloride more than 20 years ago, in June 1975.

Other studies of Monsanto/Solutia employees and retirees at the Indian Orchard plant have not shown abnormal rates of any disease. Further, no deaths from liver cancer, or soft tissue sarcoma occurred among the Indian Orchard workers included in this vinyl chloride study.

One Indian Orchard worker in this study did die of a cancer of

central nervous system, but this could be expected given the number of workers included.

We will continue to monitor the health of our employees and alert them if we determine that exposures at the plant are impacting their health. .

The Indian Orchard plant has participated in several studies of workers' health since the 1970s. The most comprehensive study of our workers to date was conducted by the University of Pittsburgh. The first phase of the study identified an excess mortality rate from certain digestive and genitourinary cancers. However, the second phase of the study found that these cancers did not relate to any particular jobs or work areas at the plant.

Solutia continues to monitor other health studies in this area. We are communicating the results of the latest study to employees and retirees who were included in the study. For some time, it has been our practice to share health information with employees and retirees.

Additional Points

Solutia continually monitors the health of its employees and retirees. To date, no work-related disease has been observed in either employees or retirees.

The most comprehensive health study of our employees to date was conducted by Dr. Gary Marsh of the University of Pittsburgh and published in the *Journal of Occupational Medicine* in March 1983. This study definitively examined mortality at the plant after earlier studies raised questions. This analysis did not support the hypothesis that genitourinary and digestive cancer, which includes pancreatic cancer, was related to a general plant exposure or date of hire. This study covered 2,490 workers, compared to the 226 Indian Orchard workers included in the CMA study.

A NIOSH study conducted during the 1970s reported significantly elevated levels of these two cancer types based on comparisons with U.S. white males. However, Marsh reported the findings were not maintained when adjusted to the cancer mortality experience of the county surrounding the Springfield plant.

Vinyl chloride is listed as a carcinogen by the National Toxicology Program. It has been shown to cause angiosarcoma of the liver, a rare form of cancer.

On Feb. 1, 1973, Monsanto announced a planned three year phase out of the of the business. The plant discontinued operations

entirely in June 1975. The business did not fit with the company's long-range business goals.

Soft Tissue Sarcoma

With regard to the latest study, the findings on soft tissue sarcoma are difficult to interpret for several reasons.

Soft tissue sarcomas are very rare, so it's necessary to group the varieties of soft tissue sarcoma in epidemiology studies. However, examining the group total may not be useful for identifying potential causes.

As the authors mention, death certificates are a poor source for collecting information on soft tissue sarcomas. Previous studies have found about half of the death certificates listing soft tissue sarcoma were inaccurate and about half of the real soft tissue sarcomas did not appear on the death certificate as the underlying cause.

One of the most common forms of soft tissue sarcoma (known as malignant fibrous histiocytoomas) were not diagnosed before the mid-1970s, which causes problems in a study, like this one, dating back to the 1940s.

Four of the 12 soft tissue sarcomas identified in this study were angiosarcomas indicating that some or all of these tumors were located in the liver and thus may be misclassified.

For these reasons, it may not be possible to do a valid comparison of the workers and the general population for soft tissue sarcomas.

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