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Brain cancers remain mystery

Researchers have only suspicions about studying chemical plant case

By HAROLD SCARLETT
Post Environment Writer

Federal health researchers, while admitting years of studies turned up no proof, still have a "gut feeling" that yet-unidentified chemical exposures may have caused excess brain cancer deaths in chemical plants and refineries along the upper Texas Gulf Coast.

The researchers, however, believe any such chemical exposures occurred years ago when standards were less strict, and any danger probably no longer exists.

Summing up the results of medical detective work that began in 1979 and is still continuing, Dr. Gordon R. Reeve of the National Institute for Occupational Safety and Health in Cincinnati said he and his NIOSH colleagues are still suspicious about the brain cases.

"I don't mean we're suspicious that the companies involved are covering up anything," Reeve said.

"We are just suspicious that given the methods available for the studies, our gut feeling is that at Dow Chemical and Union Carbide and some of the Beaumont-Port Arthur plants, something happened there, at least in the past. But we can't pin it down."

Researcher Reeve is the lead author of a NIOSH report, recently cleared for release, that summarizes the findings of brain cancer studies done by NIOSH and the affected industries over the past five years.

The studies turned up 86 brain cancer deaths at eight refineries and chemical plants in the Houston area and other Texas coastal regions.

At two chemical plants, Dow in Freeport and Union Carbide at Texas City, NIOSH said the studies "clearly indicate" excessive brain cancer deaths — about double the expected number — at least in certain categories of workers.

But the companies' researchers have pointed out that exhaustive reviews of the jobs held by the brain tumor victims showed no pattern of exposure to any specific chemicals known to cause brain cancer.

'Chance occurrence'?

The companies maintain the clusters of brain cancers therefore were, in the words of a Union Carbide official, a "chance occurrence" not related to the workplace.

However, the just-released NIOSH review notes that a large number of the brain cancer fatalities involved long-term workers at the plants. The victims included some workers hired as far back as the 1940s, when workplace standards allowed much greater exposure to chemicals than is now permitted.

At Union Carbide, NIOSH found 19 brain cancer deaths, or double an expected 9.6 deaths. Among workers with 10 to 15 years on the job, the 11 deaths were more than triple the expected 3.2 fatalities.

At Dow Chemical, a total of 25 deaths did not greatly exceed the expected 21.1 brain cancer fatalities. But for Dow workers with 20-plus years on the job, or who were hired from 1940 to 1944, brain cancer mortality was about double the expected rate.

These patterns lead Reeve and his co-reviewers, Drs. William E. Halperin and Philip J. Landrigan, to believe that if chemical exposures caused the brain cancers, they probably occurred under past conditions that may no longer exist.

The series of NIOSH studies began at Union Carbide in February 1979, after a complaint by a plant worker to the Occupational Safety and Health Administration about brain cancer cases at the plant.

At that time, the National Cancer Institute was finding brain cancer deaths at three Beaumont-Port Arthur refineries, and those initial findings led to a broader joint study by the NCI and NIOSH.

That study turned up 33 deaths — about double the expected number — at the Gulf, Texaco and Mobil refineries.

As the NIOSH review notes, Gulf and Texaco also conducted their own studies and, using a different and

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supposedly more accurate method of calculation, concluded the brain deaths were not excessive in number.

Reeve and his NIOSH colleagues, however, are not certain the so-called cohort studies used by the oil companies were really more accurate in these instances.

Different potential

"What Gulf and Texaco did was study their whole array of union and contract workers, everybody except office and clerical workers," Reeve said, "and there could be a vastly different potential for chemical exposure among these different groups."

Mobil also announced it would conduct its own study, originally scheduled for completion in late 1981. A Mobil spokesman said last week the study is still incomplete, but the results should be ready in a few months.

Meantime, while studying the Union Carbide cases, NIOSH heard reports of more brain cancer deaths at two Texas City refineries — Amoco and Marathon. Subsequent checking showed no excessive deaths at those refineries.

But in investigating the two refineries, the NIOSH report disclosed, NIOSH looked at Brazoria County death records.

"Quite unexpectedly," the report said, "it was discovered that 33 percent of all brain tumor deaths in . . . Brazoria County were listed on the certificates as former Dow Chemical employees."

Thus another cluster of brain cancer deaths was detected at Dow.

The next step was so-called case control studies in which the job histories of brain cancer victims are compared with other unaffected workers in an effort to detect any chemical cause of the cancers.

At Union Carbide, the company and NIOSH conducted separate case control studies, while Dow and Texaco carried out their own studies. None turned up evidence of any chemical link to the cancers.

However, the NIOSH report suggests a chemical linkup may have gone undetected because chemical and refinery workers frequently rotate to different jobs and workers in different job categories may have similar chemical exposures.

"It is possible that all workers, both (brain cancer) cases and controls had similar exposures," the report noted, adding that this would confound efforts to link particular jobs to specific chemical exposures.

Inaccurate data?

The NIOSH reviewers noted that the work history records used in the studies may have been inaccurate.

"The main function of personnel records is to meet payroll and bookkeeping requirements," they said, "and not to provide the basis for an epidemiology study that may be conducted 30 or 40 years in the future."

Reeve said NIOSH now has no further brain cancer studies planned or in progress.

The NCI, however, is now funding a massive two-year study of 500 new brain cancer cases along the Texas and Louisiana coasts. The study will try to determine if industrial workers have an abnormal share of the brain cancers in the total coastal population of 5.5 million — and what may be causing them.

In addition, Union Carbide and Texaco are updating their initial worker studies which went through 1977. The new studies will track any additional brain cancer deaths through 1982.

Dr. David Glenn, a Union Carbide health specialist, said the company has found about five additional brain cancer deaths, but company statisticians do not believe that an excessive number.

Reeve said he doubts there will ever be a positive answer to what caused the brain cancers in the Texas plants.

"We may be lucky enough in the future to discover a chemical cause by looking at another plant," he said. "But that is not a high probability."

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