MEMO TO Kevin Cahill

02255 E

Sorry I took so long to get you this, but our records were lost in "dead record storage." This is communication done at Krummich in 1989. The new paper prepared by Northwestern while covering some new territory is really covered in this communication

FROM Jim Collins
8811

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Krummrich Morbidity Study: Summary of Findings

Northwestern University Medical School has completed analyses of the primary hypotheses of the Krummrich Morbidity Study. This study was designed to determine if workers with past exposure to pentachlorophenol (Dept. 236), lower chlorinated phenols (Dept. 237), or agricultural esters (Dept. 268) suffered any long-term health effects as a result of their past exposure to these compounds and their chlorinated dioxin contaminants. The health status of 473 exposed workers was compared to the health status of 303 workers from the same plant who were not exposed to these compounds. Current health status was assessed through comprehensive medical examinations which were conducted in the Spring of 1986. Statistical comparisons of health outcomes between the exposed and controls gave the following results:

There were no significant differences in general health status, as measured by self-perception of health, internist's assessment, hospitalizations and doctor visits in the 12 months prior to the exam.

12% of the exposed gave a history of chloracne, while 3% still had chloracne at the time of exam. The likelihood of developing chloracne increased with duration of exposure. Outbreaks of chloracne were reported in Dept. 268 in 1966 and in Dept. 237 in 1979-1983. Chloracne in Dept. 236 occurred throughout the history of this production process.

There were no significant differences in the incidence of cirrhosis or jaundice. A higher percentage of workers in Dept. 237 reported having hepatitis, but hepatitis in these 3 workers occurred many years after their last exposure. There were no differences in current liver function.

Workers with chloracne excreted more porphyrins in their urine and were more likely to have excess hair growth. There were no cases of clinically overt porphyria among participants in the study.

There were no significant differences in central nervous system symptoms. There were no global deficits in neurobehavioral performance. Workers exposed to chlorinated phenols had poorer sustained visual attention than controls (group difference in reaction time of 20 msec). Workers exposed to pentachlorophenol and workers with chloracne had slightly poorer visual spatial memory than controls.

There were no significant differences in serum lipids between workers exposed to chlorinated phenols and controls. Workers only exposed in Dept. 268 had higher cholesterol and LDL-C. These elevations, however, were not significant for workers ever exposed in Dept. 268 and did not increase with length of exposure. Apoproteins B and E were elevated in workers only and ever exposed in Dept. 268, and apoprotein E increased with length of exposure.

There were no significant differences in symptoms of peripheral neuropathy. There were also no significant differences in vibratory or thermal thresholds in the fingers or toes.

Northwestern researchers are analyzing data for the secondary hypotheses and will present these additional results in 1990.

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