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Dystonia and tremor following exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin

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Abstract

Forty-seven railroad workers who were exposed to polychlorinated phenols, including dioxin (TCDD), during 1979 while cleaning up the chemical spillage following damage to a tank car filled with these chemicals were followed medically for the subsequent 6 years. Two committed suicide. The initial neurological complaints included a sense of fatigue and muscle aching, both of which have been reported in other individuals following dioxin exposure. On detailed neurological examination in December, 1985, 24 of 45 had dystonic writer's cramp and/or other action dystonias of the hands. None of the involved individuals had a family history of dystonia, and all 24 dated the onset of the dystonia to the first 2 to 3 years subsequent to their toxic exposure. The dystonias varied in severity but were usually mild. No other types of dystonic involvement were recognized. Thirty-five of the 45 individuals also manifested postural and terminal intention tremor which resembled benign essential tremor. None of the involved individuals had a family history of tremor, and all 35 of those affected dated the onset of the tremor to some time subsequent to their toxic exposure. Forty-three of 45 patients had histories and findings suggestive of peripheral neuropathy. This is the first report relating any type of dystonia to prior dioxin exposure and the first report relating action dystonia, such as dystonic writer's cramp, and postural/terminal intention tremor, to toxic exposure of any type.

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