

MORTALITY AMONG PFOA-EXPOSED WORKERS

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Background and Aims: PFOA is ubiquitous at low levels in the serum of residents of industrial countries, and is biopersistent. It is a suspected human carcinogen based on animal data, and some human evidence suggest it causes increased cholesterol. Few human data exist on health effects. Our aim is to determine if PFOA workers with high exposures show excess mortality from any cause. Among 1025 current workers in 2004 at the plant we have studied, those working in PFOA area had a median PFOA serum level of 494 ng/ml, while those who had never worked in a PFOA area had a median level of 114 ng/ml (Sakr et al. 2007). By comparison the US median serum level in the general population is 4 ng/ml. Previously mortality findings in this cohort have shown an excess of diabetes and kidney cancer compared to other Dupont workers, and some positive trends for heart disease mortality (Leonard et al. 2008, Sakr et al. 2009).

Methods: We have studied mortality through 2008 of 6027 workers occupationally exposed to high levels of PFOA during the period 1950-2004, in a chemical plant producing fluoropolymers. We have used a newly developed job-exposure matrix (JEM) which estimates serum levels over time based on the workers' job history. Observed PFOA serum levels over the period of 1979-2004 were available for 2125 workers directly and indirectly exposed (median 580 ng/ml, vs 5 ng/ml in the general population), as were data on plant usage of PFOA. Mortality was analyzed for 92 causes of death using the NIOSH life table and Poisson regression, using cumulative serum (ppm-days) as exposure.

Results: Results are not yet available but will be presented at the symposium.

Conclusions: To be presented at the symposium.

References:

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Sakr CJ, Kreckmann KH, Green JW, Gillies PJ, Reynolds JL, Leonard RC. Cross-sectional study of lipids and liver enzymes related to a serum biomarker of exposure (ammonium perfluorooctanoate or APFO) as part of a general health survey in a cohort of occupationally exposed workers. *J Occup Environ Med.* 2007;49:1086-96.

Leonard RC, Kreckmann KH, Sakr CJ, Symons JM. Retrospective cohort mortality study of workers in a polymer production plant including a reference population of regional workers. *Ann Epidemiol.* 2008;18:15-22.