Incidence of thyroid disease following exposure to polybrominated biphenyls and polychlorinated biphenyls, Michigan, 1974-2006.

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Source
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Abstract
Thyroid hormones, which influence body metabolism and development, could be affected by persistent organic pollutants. We sought to examine the relationship between polybrominated biphenyls (PBBs) and polychlorinated biphenyls (PCBs) and thyroid disease. We employed incidence density sampling to perform a nested case control analysis of the Michigan Long-Term PBB Cohort. Cohort members (n=3333) were exposed to PBBs through contaminated cattle feed in 1973-1974 and to PCBs through daily life. Those with detectable serum PBB and PCB concentrations at enrollment were categorized into tertiles of PBB and PCB exposure. Case-patients were cohort members answering "Yes" to "Has a healthcare provider ever told you that you had a thyroid problem?" during follow-up interviews; control-patients were cohort members answering "No". We used odds ratios (OR) with 95% confidence intervals (CI) to compare odds of thyroid disease by PBB and PCB exposure and by various risk factors. Total cumulative thyroid disease incidence after 33 years was 13.9% among women and 2.6% among men. After adjusting for body mass index, we found no statistically significant differences in odds of any type of thyroid disease among women or men with elevated PBB or PCB exposure. Compared to control-patients, women with thyroid disease had increased odds of being overweight/obese (OR=2.82, 95% CI: 1.94-4.11) and developing infertility (OR=1.71, 95% CI: 1.08-2.69), diabetes (OR=1.61, 95% CI: 1.04-2.51), or arthritis (OR=1.71, 95% CI: 1.18-2.50) during follow-up. Additional research should explore potential associations between PBBs/PCBs and thyroid disease among children exposed in utero.

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