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RETROSPECTIVE ASSESSMENT OF SPECIFIC EFFECTS OF OCCUPATIONAL EXPOSURE OF WORKERS TO PCBs IN SLOVAK REPUBLIC

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Introduction and Objective: Polychlorinated biphenyls (PCBs) have been used commercially since 1929 as dielectric and insulating non-flammable substances, additives for paints, etc. In Slovakia, 60 chemical production workers highly exposed to PCBs (mainly to Delor 103) were studied with duration of exposure ranging from 3 months to 19 years.

Materials and Methods: Clinical examinations of skin, skin histology and laboratory tests concerning lipid metabolism, iron metabolism and levels of copper provided comparisons with a control group of healthy individuals and/or the upper limits of normal values.

Results: Skin changes were found in 47 % of individuals. In most cases milia-like efflorescences (57.14 %) occurred, as well as comedones (55.35 %); other symptoms occurred in a smaller number. Hyperkeratosis, acanthosis of the epidermis (particularly in hair follicles) and a cellular infiltration of the corium were all found through histology. The intensity of cutaneous affections was associated with the changes in laboratory tests. Elevated triglycerides, cholesterol, and phospholipids were found in exposed workers. After a further two years, a significant increase in triglycerides was found in exposed individuals when compared with the control group. In addition, a significant increase in serum levels of copper, and total and unsaturated iron-binding capacity was detected.

Conclusions: Anamnesis showed that some people occupationally exposed to PCBs may develop skin changes after three months of excessive occupational exposure. The results represent a unique snapshot of worker exposure to on given location, representing the basis for comparison with population grew up in the area and live there to this day.

Biography

Associate Professor DVM Tatiana Kimáková, PhD. – published over 370 papers, presented over 160 scientific and scientific lectures home and abroad, more than 230 citations. Professor MUDr. Vladimír Bencko, DrSc. – from 1990 he was the head of the Institute of Hygiene and Epidemiology of the 1st Medical Faculty of Charles University, his written output remains prolific, with 226 WoS registered publications and a citation index of 5804 and h-index of 39

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