



P56 : PARKINSON'S DISEASE AND PESTICIDE EXPOSURE

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Organophosphate, organochlorine, carbamate pesticides cause direct poisoning to nervous system. Many other pesticides such as fumigants, diffusely affect all tissues in the body, including nervous system, although not directly target the nervous system. Organophosphates and fumigants were found to cause permanent nervous system damage as a result of exposure.

Parkinson's disease (PD) is an idiopathic disease which is characterized by pathologic decrease of pigmented neurons in brain's substantia nigra section. Some commonly used pesticides are neurotoxic, and exposure to these compounds can induce similar mechanisms to development of idiopathic PD.

Many studies say that most common form of pesticide exposure-induced chronic damage to the nervous system, is PD. Many pesticides such as new generation nicotinoids and fipronil are known to have central nervous system effects.

When epidemiological studies that have examined the relationship between PD development and pesticide exposure are researched, a positive relationship between PD and general pesticide exposure (occupational and/or non-occupational) (1.42, 95% confidence interval 1.32-1.52), and occupational pesticide exposure (1.49, 95% confidence interval 1.34-1.66) is found. Both occupational herbicide exposure and insecticide exposure is associated with PD.

Meta-analysis results indicate that there is a significant positive relationship between general pesticide exposure and development of PD. In particular, occupational pesticide exposure has higher level of coexistence with PD. Therefore, exposure time and amount of pesticide accelerates the development of PD. The active substances are both in insecticides and herbicides.

Results: In literature the majority of studies are case-control. The meta-analysis has highlighted a consistent relationship between pesticide exposure and PD. In studies on pesticide exposure and PD hereupon, there is need for prospective cohort studies rather than case-control.

Keywords: exposure, Parkinson's disease, pesticide