

Hepatological Alterations in Market Gardeners Occupationally Exposed to Pesticides in the Western Highlands of Cameroon

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Abstract : Even though the WHO, the EPA and other regulatory bodies have recognized the effects of acute pesticide poisoning little data exists on health effects after long-term low-dose exposures especially in Africa and Cameroon. The aim of this study was to evaluate the impact of pesticides on the hepatic functions of market gardeners in the Western Region of Cameroon by studying some biochemical parameters. Sixty six male market gardeners in Foubot, Massangam, and Bantoum were interviewed on their health status, habits and pesticide use in agriculture, including the spray frequency, application method, and pesticide dosage. Thirty men with no history of pesticide exposure were recruited as control group. Thereafter, their blood samples were collected for assessment of hepatic function biomarkers (ALT, AST, and albumin). The results showed that 56 pesticides containing 25 active ingredients were currently used by market gardeners enrolled in our study and most of their symptoms (headache, fatigue, skin rashes, eye irritation, and nausea) were related to the use of these chemicals. Compared to the control subjects market gardeners' ALT levels (32.9 ± 7.19 UL-1 vs. 82.11 ± 35.40 UL-1; $P < 0.001$) and, AST levels (40.63 ± 6.52 UL-1 vs. 112.11 ± 47.15 UL-1; $P < 0.001$) were significantly increased. These results suggest that liver function tests can be used as biomarkers to indicate toxicity before overt clinical signs occur. The market gardeners' chronic exposure to pesticides due to poor application measures could lead to hepatic function impairment. Further research on larger scale is needed to confirm these findings and to establish a mechanism of toxicity.

Keywords : biomarkers, liver, pesticides, occupational exposure

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