602 PESTICIDE EXPOSURE AND HEALTH PROBLEMS AMONG HORTICULTURAL PESTICIDE APPLICATORS IN ARUSHA, TANZANIA

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Introduction Exposure to pesticides has been reported to cause adverse health effects, and great numbers of people have been affected globally. Annual severe pesticide poisoning cases amount to 3 million worldwide; 25 million symptomatic occupational pesticide poisonings occur each year among agricultural workers in developing countries. Increased health symptoms have been reported as a result of pesticide exposure. In Tanzania there is limited information on health symptoms associated with pesticides exposure among horticultural pesticide applicators.

Methods A cross-sectional study was conducted among 140 pesticide applicators working in horticultural farms in three districts of Arusha region. Data on demograph, types of pesticides used, spray duration, use of personal protection equipment and neurological symptoms were collected by using a structured questionnaire. To determine the intensity of pesticide exposure, acetylcholinesterase assay was done by using the Test-mate Model 400 device with a photometric sensor. Data were analysed by using SPSS version 20.0.

Results The pesticide applicators were men with mean age 29.59±6.789 years and mean work duration of 5.76±3.036 years. Organophosphate pesticides were commonly used by 95% of the pesticide applicators. Sixty percent of pesticide applicators reported to use personal protection equipment during pesticide application. The neurological symptoms reported were body weakness, perspiration, headache, painful part of the body, poor appetite, depression and irritation. The mean average of acetylcholinesterase was 26.788±4.0952 u/g hgb. About 27% of pesticide applicators had acetylcholinesterase level below the limit value of 24.5 u/g hgb.

Conclusion The study shows 27.1% of pesticide applicators had acetylcholinesterase level below the limit value suggesting that exposure to pesticide may result to the neurological symptoms reported. Therefore specific pesticide management interventions are needed to prevent pesticide exposure and reduce the incidence of neurological health symptoms among the pesticide applicators. Acetylcholinesterase monitoring is needed for horticultural farm workers’ surveillance.

821 OCCUPATIONAL HEALTH SURVEILLANCE ACTIVITIES FOR AGRICULTURAL WORKERS AND ANIMAL BREEDERS IN SOUTHWEST OF IRAN

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Introduction There are about 1.3 billion workers engaged in agricultural sector which is one of the most hazardous sectors in the world. Farmers are mainly at risk of exposure to physical, chemical and biological or hazards in the workplace. This paper is part of a wide project that will be addressed in health surveillance activities for the agricultural workers, and characterising exposure to biological, chemical and physical risks among farmers and animal breeders in the Region of Abadan district, southwest of Iran.

Methods A cross-sectional study was carried out in Abadan district, southwest of Iran. Two groups of farmers and animal breeders were included in the study. Personal data and socio-demographic and clinical information, personal habits and the results of physical and laboratory examination were obtained by the personal data collection forms through health surveillance activities by expert health professionals. Blood samples were collected from all the subjects, lung function was measured using a spirometer. Data were analysed using IBM SPSS statistics 22 software (IBM, Armonk, NY, USA).

Results The study stresses the significant increase of immune parameters in animal breeders in the Abadan district. Workers in rural areas were relatively at higher risk of zoonoses and occupational diseases than in urban areas.

Conclusion Despite underreporting of occupational diseases in agriculture setting, available data clearly show a significant health risk, and therefore the there is a strong need for conducting health surveillance activities at the workplace in southwest of Iran. The implementation of health surveillance programs for agricultural workers relies on the possibility of creating a system able to reach the workers at their workplaces and with the collaboration of employers’ associations, will be able to support enterprises in several issues, including risk assessment and management.