Health risk exposure to cypermethrin: A case study of Kano state, Nigeria

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Introduction

There is no denying the fact that the current poor pesticides safety performance in Nigeria is as a result of the defective issues surrounding it. One of the most common causes of death from pesticides is carelessness in the application. Spray applicators frequently ignore recommended procedures and cover themselves with the pesticides they are using. Most of the exposure is dermal. Pray droplets are too large to be easily inhaled. Protective clothing is uncomfortable to wear, especially in warm weather, when most applications take place. As Pesticides become an important and growing component of the 21st century that has been widely adopted globally to control pests, diseases, weeds and other plant pathogens, in an effort to reduce or eliminate losses in yield and maintain good product quality. As the world relies heavily on pyrethroids for the control of vector-borne diseases, including malaria. Huge advances have been made over the past 20 years in malaria control to cut transmission by about half, primarily using pyrethroid-treated mosquito nets, and prevented millions of malaria-caused deaths in the process (Bhatt et al., 2015). Although pesticides are said to be toxic and exposures farmers to risk due to the hazardous effects of these chemicals, the use of these chemicals causes headaches, nausea, tremors, and damage to important organs such as the liver and kidneys. Accumulation of insecticides little by little in a long time can cause delayed effects which are more dangerous than diseases caused by receiving insecticides once in rather high levels. Delayed effects occur in the form of skin cancer, lung cancer and liver cancer (Wardhana, 2004). Pesticide use among farmers in Kano is relatively high and farmers in Kano practice both subsistence and commercial farming, which use large amounts of pesticides. Studies by Isah, (2019) and Isah et al (2020 in print) shows the most commonly used pesticide Cypermethrin 118 (33.6%) was applied often by farmers in Kano State (see figure 1 below) and are those categorized by the WHO, 2009 as moderately hazardous and slightly hazardous, mostly pyrethroids, phenylamide and s-metolachlor compounds. Given series of evidence of unsafe handling practices in Kano State (Isah, 2019), and the huge quantity of pesticides distributed suggests a high potential for human exposure, health injuries and illness. Indeed, study identified acute pesticide poisoning (APP) as a major problem in the farming community (Isah, 2019). At global level, it is estimated that hundreds of thousands of people die yearly from the consequences of pesticides exposure (Konradsen et al., 2003; Sekiyama et al., 2007) but the most problematic poisoning circumstance is suicide. Despite the high burden of APP in developing countries, there is substantial under-reporting suggesting that the burden of disease due to APP is frequently underestimated (London & Bailie, 2001). In addition, the World Health Organization (WHO) estimates that 1-5 million cases of pesticide poisoning occur in farmers with a death rate reaching 220,000 people yearly. Direct (acute) poisoning can reduce cholinesterase activity. Cholinesterase is an enzyme (a form of biological catalyst) in body tissues that acts to keep muscles, glands and nerve cells working in an organized and harmonious manner. Decreased cholinesterase activity will affect the muscle fibers consciously with smooth and rough movements as a result, farmer’s experience headache, stomach cramps, muscle weakness, vomiting, dizziness, shortness of breath, blurred vision, eye irritation (Gallo, 1991; Isah, 2019).

References


Figure 1: Chart showing the different types of pesticides used by farmers in Kura LGA of Kano State. (Adapted from Isah, 2019)


6. Isah Hussain Muhammad (2019) Risk Assessment Associated with Pesticide Application on Selected Agricultural farmland in Kano State, Nigeria. MSc thesis from the Department of Environmental Health Sciences, School of Allied Sciences, Kwara State University.


