EDITORIAL

POISONING PATTERN

Human poisoning with chemicals, including drugs, is emotive because of the real possibility that it often culminates in death. In acute poisoning, clinical symptoms such as vomiting, delirium, diarrhoea, convulsions, *et cetera*, are very dramatic, yet the onlookers with no medical background can only watch helplessly as the poisoned patient writhes in pain, crying for assistance, fearful of impending end result. In the case of self-poisoning, the victim aims to send a protest message usually to immediate relatives and friends, leaving them nursing a guilty conscience. Conversely, chronic poisoning is insidious, occurs over a long period and is rarely accompanied by dramatic episodes characteristic of acute poisoning. Often, it is mistaken for a disease. Several examples of chronic poisoning abound. Lead poisoning, common among workers in the paint industry, occurs over a long period and leads to impairment of neurocognitive functions. In the 1950s, a neurologic disease occurred in the Japanese village of Minamata. It is only later that the causative agent was identified to be methylmercury formed in sea water by metabolic action of aquatic organisms on elemental mercury discharged from a nearby factory. Bioaccumulation of methylmercury then occurred in fish which were eventually eaten by humans. Thallium poisoning is characterized by alopecia often seen one to two weeks later when the patient is about to be discharged from hospital. Thus, in chronic poisoning, it is difficult to establish definitive cause-effect relationship particularly for purpose of litigation.

Human poisoning is often a result of close interaction between the victim, the poisoning agent and the environment. Depending on the peculiarity of each geographical region, a pattern of poisoning is discernible and this does not change significantly over a long period. A pattern of poisoning in a specific region enables the relevant authority to put in place preventive strategies. For example, kerosene has been identified as an important poisoning agent in children aged 2-5 years. Therefore, any poisoning preventive measures targeting the 2-5 years age bracket should focus on kerosene. Up to 1990s, chloroquine used for falciparum malaria was readily available in retail shops and kiosks in Kenya. It was commonly misused to procure abortion and caused more deaths than all other drugs combined. After it was withdrawn from the market in favour of artemisinin combinations in the early 2000s, there are hardly any deaths attributable to chloroquine thus showing the close relationship between poisoning and availability of the poisoning agent.

A breakdown of pattern of poisoning according to age shows that the age group 21-30 years is very vulnerable. This is the most stressful period when young people are trying to come into terms with the harsh reality of life after severing the dependent relationship with their parents and have to fend for themselves. Disillusionment with prospective marriage partners and lack of suitable jobs after graduating from college exacerbates the stressful situation associated with this period of adjustment. Self poisoning is common in this age group but only about 1 in 20 cases result in death. This has been interpreted to mean that many of the victims take poison to attract sympathy. Children in the age group 2-5 years and the elderly people over 70 years are prone to accidental poisoning with drugs and household agents. Again, rarely does poisoning with drugs cause death. Instead, transient symptoms which resolve on their own or upon hospital admission are common. In nearly all cases of human poisoning, there is a close relationship between the availability of the poisoning agents and the incidence of poisoning. In the agricultural farming areas, both self poisoning and accidental poisoning with agrochemicals are common. Currently, organophosphate insecticides are the most common poisoning agents among the agrochemicals in Kenya and possibly other countries in Africa.

In this issue of the journal, an article by Nyamu *et al*. gives data on acute poisoning in Kenyatta National Hospital, a national referral and University teaching hospital. As authors rightly admit, many cases of acute poisoning do not reach hospitals because the transient symptoms resolve without medical intervention. The data reported does nevertheless show a general trend consistent with others reported earlier. Cases of deliberate or accidental poisoning resulting in death before hospital admission are considered "Police cases". The victim's body is taken to mortuary by Police and a postmortem examination done by a designated (gazetted) pathologist. The pathologist sends suitable samples, such as the victim's urine, blood, liver and stomach contents, to a government analyst who subsequently presents the results at the inquest. Typical examples of "Police cases" include suicide, suspected homicide, death during attempted abortion, and death from traditional alcoholic brews laced with methanol. Data by Nyamu *et al*. also does not include food poisoning with bacterial toxins such as by botulin and salmonella. Thus, to get a comprehensive national data on acute poisoning, one would need to rely on several sources, and these include the Government Chemists Department.

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