Editorial

PREVENTION AND CURRENT SCENARIO OF UNINTENTIONAL POISONING

Abstract

Deaths due to poisoning are common and unintentional poisoning deaths lead the fatality rate around the globe. Accidental deaths are observed usually with the commonly available household products and children are particularly prone to these types of poisoning. Agriculture being the most common occupation in India insecticides and pesticides pose a particular threat. They are commonly used to increase the yield of agricultural products. Carelessness in handling these products results in many accidental cases. There is a particular need to educate the farming community to reduce the morbidity and mortality due to improper use and handling of these products. Snakebites are also a major source of causalities and are responsible for many unintentional deaths. Better facilities to treat the poisoning cases can result in reducing the mortality. Environmental pollution and occupational hazards play their own role in increasing the morbidity and mortality. There is need to educate the community about preventive measures to prevent accidental deaths.

Keywords: Poisoning, accidental deaths; prevention of poisoning; unintentional deaths.

Introduction

"Poisoning has been defined in a variety of manners but the most comprehensive definition of a poison is "any product or substance that can harm someone if it is used in the wrong way, by the wrong person, or in the wrong amount. [1]". Unintentional poisoning is a worldwide phenomenon but such poisonings are more common in developing countries. Low and middle income group countries are more prone to accidental deaths due to poisoning and 94% deaths of total unintentional poisoning in the globe are seen in such countries. In the year 2002 according to one of the WHO study 350.000 died due to accidental poisoning only. In the year 2000 it was the 9th leading cause o death in the age group of 15-29 years [2]. Snake bites, medicines, cosmetics and cleaning products at homes, chemicals in foods, environmental pollution, occupational hazards and chemical disasters all can lead to unintentional deaths many of which can be prevented.

Snake bites

Snake bite is common problem and about 2.5 million people get snake bite per year and about 1.25.000 people die due to snake bite in the world. Out of this mortality majority is of Asians which alone are responsible for 100,000 deaths. Out of 400,000 snake bites in Asia, poisoning occurred in half and 1/4th of snake bite victims died. In India snake bite incidence per year is 66-133/100,000 population resulting in morbidity of 14-68/100, 000 and mortality of 1.1-2.4/100,000 with case fatality rate of 17-20% [3]. In some areas of the world, scorpions also play an important role in increasing the fatality rate.

Chemicals in foods

Foods contain many chemicals. These chemicals may be natural, additives and residual. There may be some chemicals in natural food too like Solanine in potatoes and cyanogenic glycosides in cassava [4]. These are toxic for human health. Additves may be added to impart color or flavour to food or as a preservative. Insecticides and pesticides used to boost production of food grains remain as residue to various extents in the food grains and may be toxic for the health of animals and human beings. This may be responsible for the morbidity or mortality in the long run.

IPCS (International Program on Chemical Safety) assess the safety of food components, toxic natural constituents, contaminants, food additives and residues of insecticides, pesticides and veterinary drugs. IPCS carry out risk assessment of various chemicals due to food processing and cooking. IPCS also advises the Food and Agricultural Organization (IFO) and Joint Meeting on Pesticides Residues on chemicals in foods. The goal of the IPCS is to build the capacity of countries to deal with such issues [5]. When foods are cooked at very high temperatures certain chemicals like Acrylamide may be produced which may be harmful for the health. Acrylamide are known to cause cancers in animals and nerve damage in human beings [6]. Semicarbazide is another harmful product in foods which may be present in the foods stored in glass containers having metal lids that have foamed plastic seals containing azodicarbonamide which is a weak carcinogen. Usually children use food stored in glass containers with metal lids. It is also a metabolite of veterinary drug nitrofurazone and of the additives made from seaweed products. It is also used as a bleaching agent in cereal flour and in certain pesticides formulations [7].

Environmental pollutants

Environmental pollutants also jeopardize the health of the individuals. Lead and chlorinated compounds are present in the environment which can be harmful for the health. Cadmium is present in the crust of the earth and is toxic. Shell fish poison, alfatoxin from algae and natural moulds are found in nature. All the above mentioned toxins from the environment may cause harm directly or through the food [4]. CO_2 is added to environment by many industries particularly energy intensive industries like steel industry, cement industry, paper mills, oil industry and power plants. NO_2 is another contaminant in the air coming from vehicles and industries.

Both air pollution and water pollution are responsible for chronic illnesses. Increasing urbanization and industrial progress is directly related to increasing chemical pollution of air and water. Increasing number of vehicles cause cumulative increased emissions in the environment. All these factors are making industrialized places unfit for human inhabitation. About two million people die prematurely every year due to air pollution and many more suffer due to chronic diseases like breathing problems, heart diseases, lung infections and cancers. Refineries, vehicles, thermal power plants and industries are main culprits for air pollution. Emissions from vehicles are responsible for 70% of air pollution in India [8]. Pollution is aggravated by mining activities, dumping of solid wastes and discharge of liquid wastes into water bodies. Even sea water is being polluted.

Poisoning at homes

Homes are considered very safe and are built and prepared for safety of inhabitants. These days even we cannot think of running homes without the use of chemicals. These have to be used in the form of various household products, medicines and cooking systems. Even ornamental plants may pose a

problem and some of these may be poisonous. Cosmetics including perfumes nail polishes and cleaning agents e.g. detergents and floor cleaners pose a particular problem to children. Medicines including topical applications are potential source of poisoning at homes to children as well as adults. Corrosive cleaners and drain openers, windshield washing products, fuels and pesticides are most dangerous products available readily at homes.

Poison prevention measures at home

There is a need to be cautious with the chemicals stored in the house which may be medicines or household products. As children are more prone to poisoning with these products more caution is needed in the houses where there are small children. Keep medicines and household products in original containers at separate locations and never keep them at the same place where food items are kept. Always follow the instructions on the label to use them.

Some plants in the homes may be poisonous and care is needed when small children are playing near these plants. Children love to copy the adults and if someone is regularly taking medicines should avoid taking medicines in front of children otherwise they may pick up medicines from table or bedside tables and consume these causing harm to themselves. To lure the children to comply with taking the prescribed drugs never call medicines as candy as they may love to have the candies when nobody is watching them [9].

Occupational hazards

Persons of certain occupations are particularly exposed to the hazards of the chemicals and toxins which they are handling. This is due to lack of education and training to handle these chemicals safely. Farmers are particularly exposed to insecticides, pesticides and snake bites. Whenever workers become lax in safety levels they fall prey to unintentional poisoning e.g. insecticide poisoning in farmers while spraying insecticides and asbestos poisoning in the workers in ship breaking yards.

Chemical disasters

We cannot think of life without the chemical processes in one form or the other. In various manufacturing units chemical processes are taking place in a controlled manner. But these are the potential source of hazards to human health and life. If an employee becomes lax in duty even once and for a short time, disasters are bound to occur. In India one such disaster occurred at Bhopal on the night of Dec 2 and 3, 1984. In this incident leakage of Methyl Isocyanate, CO, CO2, Phosgene, HCl, Mehtylmonoamine in the environment caused 500,000 people to suffer with 1000 deaths on the same day and 25,000 deaths occurring due to complications later on [10]. All these deaths were unintentional and were totally preventable if good care had been taken for following the norms of upkeep of the machinery.

Conclusions

In most of the unintentional poisonings, deaths result due to poor management of the cases. There are very few specialized poisoning treatment centres in our country. Even in the existing treatment centres there are meagre facilities present to treat such cases. Increased number of specialized treatment centres and better treatment facilities will definitely reduce the number of deaths due to poisoning. Availability of antivenin at treatment centres will definitely reduce the mortality due

to snake bites. Health authorities must pay heed to these fact. To save the huge loss of life due to unintentional poisonings we need to develop the capacity to treat poisoning cases effectively. Many countries do not have access to poison Centres. IPCS helps in the capacity building of various countries particularly the under developed countries and countries like India which are still developing [11]. IPCS has developed a Global Harmonised System (GHS) of Classification of chemicals and Labelling of Chemicals and this system will help on the safe use of chemicals and sound management of chemicals [12] reducing the morbidity and mortality due to chemicals.

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