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Editorial

On Distinction of Organocarbamate and Organophosphorous Pesticide Poisoning at Point of Care: A Timely Highlight

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Pesticides are one of the irreplaceable requirements in the field of agriculture [1]. In developing countries like India, where the primary source of income is agriculture, the use of pesticides can't be actually prohibited. Pesticides help to overcome the break out of pest attacks and fulfil the population's food needs. But, the disadvantages of the use of pesticides can't be ignored too [2].

The availability of pesticides, although regulated, still needs to be controlled. Deaths due to pesticide intake are prevalent in developing countries. Recent studies report about 385 million cases of acute pesticide poisoning to occur annually, including 11,000 fatalities. Moreover, the highest numbers of cases are observed in south Asia, east Africa and south-east Asian parts of the world [3].

Organo-phosphorous (OP) and organo-carbamate(OC) poisoning are among the most common poisoning cases observed in rural Asia. It happens either due to accidental exposure or intentional use of the pesticides for suicidal purposes [4].

To prevent deaths due to pesticide intake, the research regarding the treatment and detection of poisoning must be advanced. These pesticides inhibit acetylcholinesterase. Therefore, the treatment includes atropine (anticholinergic) and oximes (cholinesterase reactivators) [4]. However, the use of oximes for carbamate poisoning is still controversial. The studies have shown that in OC exposure, oximes treatment can lead to enhanced toxicity due to the production of carbamylated oximes. In contrast, others believe that carbamate poisoning doesn't require oxime treatment [5,6]. Therefore, using oximes in pesticide poisoning cases needs to be given with caution [7].

At the present moment, management is done empirically. Cholinergic symptoms appear in poisoning with OP or OC compound. So, the clinical distinction is impossible. Erythrocyte cholinesterase is considered a gold standard biomarker for both. Hence laboratory distinction of these poisoning is not possible at the present moment. Particularly, we like to emphasise that at the point of care, there is no approved method to distinguish between OP and OC poisoning. So, oxime therapy, if decided to be given, has to be done without the knowledge of the chemical nature of the poison.

With all these considerations, we feel that there is a need to develop a method to distinguish between OP and OC poisoning.

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