ABSTRACT

Cholinesterase monitoring is intended to prevent further exposure of asymptomatic workers with depressed cholinesterase activity levels, thereby preventing poisoning. While the effects of acute pesticide poisoning are well known, hardly any data exist with regard to chronic effects. This study was cross-sectional analytic study of determining the acetylcholinesterase level based on the baseline data among workers of Awba Pesticide Factory at Yangon region in 2015.

In this study, all 82 workers who had baseline acetylcholinesterase level were interviewed by structured questionnaires. Additional questions were asked on symptoms experienced at the time of interview, with a checklist of 15 symptoms. Their attitude and practice on safety measures and work place conditions were determined by observational checklists. Baseline data on first month were recorded and acetylcholinesterase level was investigated after 9 months using colorimetric method. The majority of workers were female (74.4%) with an average age of 30 years, where the ages were ranged from 19 to 46 years. The workers who had positive attitude on safety measures were 72% of total workers. The mean acetylcholinesterase level was 130.91± 28.99 IU/l at baseline level and 112.01± 21.26 IU/l after 9 months level. There was significant difference of acetylcholinesterase level between first and 9 months (paired t-test= 4.105, $p < 0.001$). It was found that 51.2% of workers had decreased acetylcholinesterase level from their baseline. Working in productive section was 6.9 times of decreased acetylcholinesterase than other sections (adjusted odds ratio (aOR) = 6.958, 95% confidence interval (CI) = 1.339-36.152). Workers whose service less than 5 years had 3.8 times odds of decreasing acetylcholinesterase level than those with older service (aOR = 3.831, 95% CI = 1.296-11.329). Moreover, there was a statistically significant association between level of attitude and decreased acetylcholinesterase level (aOR=5.721, 95%CI = 1.021-32.066). In view of the significant decrease in acetylcholinesterase level among pesticide workers, it seems that routine assessment of acetylcholinesterase level in workers employed in such occupations and people handling pesticides should be made obligatory.