CHAPTER V

CONCLUSION

248 patients (179 female, 69 male) in the present study were 78 smokers (22 female, 56 male) and 170 non-smokers (157 female, 13 male). Studies have shown that the population high levels of cadmium 74.19% (184 cases) are male 23.91% (44 cases) and female 76.09% (140 cases). Non-smokers have shown high levels of cadmium in urine 19.76% and smoker have high levels of cadmium in urine 10.8%. The level of cadmium that would contribute to the functioning of various organs in the body, such as kidney, liver and bone the results were found that the level of the value that indicates the ability of the kidneys in people who are elderly and live in the area for a long time the BUN, creatinine, NAG activity are more likely than ever and the level of eCrCl which demonstrates the ability to re-absorption of the kidney are likely to decline. In addition, the levels of ALP, which is the one which represents the balance in the creation and destruction of bone tended to be higher as well.

From the results reveal that high cadmium-exposure can damage renal, by causing renal dysfunction indicate by increasing in NAG activity and decreasing in eCrCl.

In general, cadmium excretion in urine increases with age, being female, and level of smoking. Similar findings were observed in the cadmium-exposed persons living in these contaminated areas when the analysis included all levels of urinary cadmium. These findings revealed that a significant proportion of the study persons with high urinary cadmium levels had abnormal renal measurements

Although increases in incidences of tubular and glomerular dysfunctions have been identified among cadmium-exposed residents in numerous epidemiologic studies, including the present survey, no bio-markers are specific indicators of cadmium toxic effects. The present report found some medical conditions in the survey persons with elevated levels of renal markers. Some renal conditions such as hypokalemic periodic paralysis and endemic distal renal tubular acidosis, which are common in Thailand may partly contribute to renal dysfunction among the study persons.

This findings suggest that further investigations for possible detection of other potential causes of renal dysfunction should be carried out individually among those cadmium-exposed persons with abnormal renal markers, which may lead to appropriate case management

Bone damage belongs to the main health effects of cadmium (Cd) action in human. Recent epidemiological studies provide evidence that even relatively low chronic exposure to this metal creates a risk of bone injury, including osteoporosis (Schutte, et al., 2008; Chen, et al., 2009; Gallagher, et al., 2010; Suwazono, et al., 2010). Moreover, prediction indicate that the lifetime general population exposure to Cd will show an increasing trend. Thus, a growing interest has been focused on estimation of the risk of skeleton damage at Cd exposure and mechanisms of the action. This knowledge is necessary for searching effective ways of bone protection from damage by Cd and treatment of this metal induced skeletal injury.

From this research is to take advantage of testing methods to help assessment of health status of the population live in areas at risk of exposure to cadmium. And help to prediction the incidence disease in the population to help in the monitoring policy.

In summary, this study showed that those areas still emerge in high levels of cadmium, NAG and eCrCl determination can use as the early markers for renal function in these population before they cause the chronic kidney disease.