

## ABSTRACT

### **The Effect Of Mercury Levels Against Cystatin C Serum Levels And Kidney Disorders Complaints In The Blood Of Traditional Gold Processing In Two Village Kokap District, Kulon Progo Yogyakarta**

Traditional gold processing which using a mercury (Hg) as binder (amalgamation) could be environmental and human hazard. Mercury was a toxic substance that caused kidney damage. The aim of this study was to analyze effect of mercury levels against Cystatin C serum and kidney disorders complaints in the blood of traditional gold processing in two villages Kokap District, Kulon Progo Yogyakarta. The risk factors of characteristics were age, length of work, nutritional status (BMI) and personal protective equipment (PPE). The research was an explanatory research with observational method using cross sectional design. The subject technic was simple random sampling were 11 exposed and 11 unexposed with inclusion criteria. The data collected through observation, laboratory tests and questionnaire. The analyzed data by descriptive and inferential (multiple linear regressions and multiple logistic regressions). The results was mercury levels in the blood of exposed and unexposed groups between  $<8$  to  $> 8$   $\mu\text{g/l}$ . The average of mercury levels for the exposed group was  $63,65$   $\mu\text{g/l}$  and the group unexposed was  $25,56$   $\mu\text{g/l}$  (Mercury levels standard= $8$   $\mu\text{g/l}$ ). Cystatin C serum levels for exposed and unexposed groups was between  $<0,53$  to  $>1,01$   $\text{mg/L}$ . The average of Cystatin C serum levels for exposed groups was  $1,07$   $\text{mg/L}$  and for the unexposed group was  $1,10$   $\text{mg/L}$  (Cystatin C serum levels standard =  $0,53 - 1,01$   $\text{mg/L}$ ). Besides that, the kidneys disorders complaints were  $66,67$  % exposed group and  $33,33$  % unexposed group. The analyzed in linier regression showed mercury levels in the blood, nutritional status (BMI) and age againts Cystatin C serum levels. The analyzed in logistic regression showed mercury levels in the blood against the kidneys disorders complaints. The conclusion from this study was blood mercury level, nutritional status (BMI), age againts Cystatin C serum levels and mercury levels againts the kidneys disorders complaints in traditional gold processing. It suggested to reduce mercury exposure processing traditional gold was rotation and shift work arrangements should use complete personal protective equipment (PPE), furthermore the traditional gold prossessing to make ideal weight.

**Keywords:** *mercury levels, Cystatin C serum levels, the kidney disorders complaints, a traditional gold processing.*