Abstract

ANALYSIS OF BRAIN SPECIFIC CREATINE KINASE, NEURON SPECIFIC ENOLASE, S100B FROM POST MORTEM CEREBROSPINAL FLUID AND SERUM ON BLUNT BRAIN INJURY TO DETERMINE CAUSE OF DEATH AND TIME OF DEATH
(*Experimental Study of Rattusnovergicus*)

Rika Susanti

Blunt brain injury is the highest cause of death in crime. Many efforts to determining cause of death, besides autopsy, have been done. CKBB, NSE, and S100B levels is some of biomarkers that found in human getting blunt brain injury. Alternative of determining cause of death, besides autopsy, is focused to these biomarkers. Study's purpose is to analyze CKBB, NSE, and S100B levels in cerebrospinal fluid and serum to determining cause of death and time of death. Moreover, this study describes about histopathology description of brain tissue.

This is experimental study with post test only group design, comparing handling of death caused because of blunt brain injury to ketamine acute poisoning. Total of handling groups are 8. Each group has 6 mature Rattusnovergicus Sprague Dawley. CKBB, NSE, and S100B levels were examined by sandwich ELISA after 0 hour, 1 hour, 2 hours and 3 hours post mortem. This study examined histopathologyof brain tissue usingHematoxylin Eosin staining. It showed bleeding, congestive, inflammation cell, and necrotic.This study usedGeneral Linear Model Repeated Measure test to analyze of CKBB, NSE and S100B levels in cerebrospinal and serum post mortem to determining cause of death and time of death. To analyze histopathology description, Mann Whitney test was used.

CKBB, NSE and S100B levels in cerebrospinal fluid and serum were increased in death causedbecause of blunt brain injury and ketamine acute poisoning. Multivariate test of CKBB level in cerebrospinal fluid based on time of death has p=0.709, based on cause of death has p=0.114. Multivariate test of CKBB level in serum based on time of death has p=0.009, based on cause of death has p=p.0671. Multivariate test of NSE level in serum based on time of death has p=0.016, based on cause of death has p=0.037. There is no significant difference between CKBB, NSE, and S100B levels in cerebrospinal fluid and serum from both of them. But, significant difference was found from NSE level in serum, which has p=0.005. Overall, there is no significant difference from CKBB, NSE and S100B in cerebrospinal fluid and serum based on time of death. There is significant difference between histopathology descriptionof bleeding and congestive from death caused because of blunt brain injury and ketamine acute poisoning.

CKBB, NSE and S100B in cerebrospinal fluid and serum were increased in death causedbecause of blunt brain trauma and ketamine acute poisoning. Both of them have significant difference in histopathology description of bleeding and congestive.

Keywords: blunt brain injury, CKBB, NSE, S100B, cause of death.