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Analysis of Brain Specific Creatine Kinase of Postmortem Cerebrospinal Fluid and Serum in Blunt Head Trauma Cases

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Abstract : Introduction: Blunt head trauma is one of the leading causes of death associated with murders and other deaths involved in criminal acts. Creatine kinase (CKBB) levels have been used as a biomarker for blunt head trauma. Therefore, it is now used as an alternative to an autopsy. The aim of this study is to investigate CKBB levels in cerebrospinal fluid (CSF) and post-mortem serum in order to deduce the cause and time of death. Method: This investigation was conducted through post-test–only group design involving deaths caused by blunt head trauma, which was compared to deaths caused by ketamine poisoning. Results: There were eight treatment groups, each consisting of six adult rats (Rattus norvegicus) Sprague-Dawley strain. Examinations were done at 0 hours, 1 hour, 2 hours, and 3 hours post-mortem, which followed by brain tissue observation. Data were then analyzed statistically with a repeated-measures general linear model. Conclusion: There were increases in the level of CKBB in CSF and postmortem serum in both blunt head trauma and ketamine poisoning treatment groups. However, there were no significant differences between these two groups.

Keywords : blunt head trauma, CKBB, the cause of death, estimated time of death
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