Biochemical Analysis of Synovial Fluid, Cerebrospinal Fluid and Vitreous Humor at Early Postmortem Intervals in Donkeys

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Abstract:

Fluid (CSF) and vitreous humor are easily accessible and well preserved from contamination. Five donkeys (Equus africanus asinus) aged 1 - 2 years old were subjected to the study. Samples (Synovial fluid, CSF and vitreous humor) were collected before death (antimortem) and then at 2, 4, 6, 8, 10 and 12 hours postmortem. Samples were analyzed for glucose, chloride, sodium, magnesium, potassium, enzymes and total protein. Synovial fluid analysis showed that glucose concentration started to decrease at 6 hours postmortem, while magnesium level increased with time. Other parameters were more stable. CSF analysis showed several changes related to time after death as the decrease in glucose and sodium levels, and the increased levels of potassium, magnesium, calcium and total protein. Vitreous analysis revealed a reduction in glucose level and increased potassium and magnesium concentrations. The present study concluded that biochemical analysis of synovial fluid, vitreous humor and CSF can help in determination of time since death in donkeys. This study recommend using CSF for determination of early post-mortem intervals.

Keywords:

Biochemical; Cerebrospinal; Donkey; Postmortem; Synovial; Vitreous humor

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