Abstract

Introduction: In investigation of crime it is essential for the investigating officer to have knowledge about the place of death, cause of death and time since death (TSD). To fix TSD based on post-mortem changes is a constant challenge for the medico-legal experts. Determination of accurate time since death based on rate of physical post-mortem changes alone gives us an approximate range of post mortem interval (PMI). But as the judiciary is in need of fixing PMI at a lower range, chemical methods to estimate PMI in body fluids were studied. Among the biochemical changes in body fluids, the most widely studied is the estimation of electrolytes in vitreous fluid and CSF.

Aims of the study: 1. To know the relationship between changes in electrolytes (sodium, potassium and chloride) in vitreous humour and CSF with increasing PMI. 2. To find out the correlation between the TSD and Cause since death with change in electrolytes. 3. To find if any relation with age occurs with change in concentration of electrolytes in vitreous humour and CSF.

2. Materials and methods: Samples of vitreous humour taken from posterior chamber of eye through a puncture made 5-6 mm away from limbus using 10 ml syringe and 20 gauze needle. The sample then transferred to a sterile stoppered container and analysed in for electrolytes in Central Laboratory immediately. And the values of electrolytes noted. CSF obtained by either
lumbar puncture or cisternal puncture using 22 gauze spinal needle. 2ml of CSF aspirated and transferred to a sterile tube and analysed for electrolytes.

**Observation and Results:**

The study comprised of 100 cases. The cases were grouped as per the time since death divided as 0-6 H, 6.1 – 12H ,12.1- 18H and 18.1 – 24H. For each group of TSD the samples were divided according to age, sex and cause of death (poison, hanging and road traffic accidents). There were 3 cases in 0-6 hours, 29 cases in 6.1 to 12 hours, 45 cases in 12.1 to 18 hours and 22 cases in 18.1 to 24 hours. The changes in electrolytes (sodium, potassium and chloride) in vitreous humour and CSF with time since death was studied.

**Conclusion:** The change in electrolytes (sodium, potassium and chloride) in vitreous humour and CSF with time since death did not show any remarkable change.

**Key Words**: Vitreous humour, CSF, Spinal fluid aspiration, Vitreous humour aspiration, electrolytes, time since death and post mortem interval.