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Postmortem vitreous chemistry – An evaluation of sodium, potassium and chloride levels in estimation of time since death (during the first 36hours after death

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Introduction

Estimation of time since death is a paramount medico-legal issue in autopsy

An appropriate range of postmortem interval can be deduced by intelligent interpretation of various changes that occurs after death.

Fluids- Blood, CSF & Vitreous humor show biochemical changes after death.

Vitreous is gained from the vitreous body and is accompanied by decelerated diffusion and hardly contaminated even in late postmortem intervals.

This study was intended to study correlation between postmortem interval and vitreous humor chemistry for sodium, potassium and chlorides.

Aimed to find male tp female differences and differences between right and left eyes in vitreous chemistry

VOLUNTEER'S CONSENT FORM

1.	This study has been explained to me (relative/next kin) and I understand:
2.	What the study involves.
3.	That I can refuse to permit for removal of VITREOUS HUMOR
4.	That refusal to permit will not affect the outcome of autopsy.
5.	I therefore agree to take part in this study
6.	Signature of the relative / next kin
	Full name:
	Date:
9.	Full address:
10.	I HAVE BEEN PRESENT WHILE THE PROCEDURE HAS BEEN EXPLAINED TO
	THE RELATIVE AND I HAVE WITNESSED HIS/HER CONSENT FOR THE PROCEDURE
11.	Signature of the witness:
	Full Name:
13.	Date:
14.	Full Address:

Materials & methods

- Study was carried out in mortuary, Department of Forensic medicine in association with Dept of Biochemistry along with MMC&RI Forensic Medicine dept
- Vitreous was collected from 100 deceased subjected for autopsy.
- All the cases where exact time of death was known and where the time since death ranged between 0 and 36 hours were included in the study



Crystal clear fluid will be used for analysis

Exclusion criteria

- Cases with known or suspected ocular disease, localized trauma, head injury involving orbit, burns.
- Vitreous contaminated with blood and tissue.

• 18 gauge needle will be inserted obliquely through sclera, 5mm lateral to limbus, this traverse the pars plana and enter vitreous body and gently 2ml of vitreous will be drawn into 10ml sterile syringe and later transferred to borosil 5ml test tube, the same is repeated on the other eye





 Collected Vitreous humor was centrifuged at 3000 g and supernatant - transferred to another test tube and sent to Laboratory for estimation. Care was ensured to prevent any contamination with blood/RBC's

- In the Laboratory, Potassium will be estimated by Ion Selective Electrode Methods on AVL Roche Electrolyte Analyzer.
- Potassium electrodes were fitted with liquid ion exchange membranes that incorporate valinomycin.

- The analyzer can measure Potassium levels in the range of 1.8 to 12 mmol/litre.
- Daily Quality checks will be performed using level 2 and level 3 quality control sera from Bio-Rad Laboratories.



 Data obtained was analyzed statistically using SPSS version 11.0 ■ The present research did not find a significant correlation between vitreous chemistry and postmortem interval. The differences in vitreous sodium, potassium, chloride levels and the sodium potassium ratio among males and females and between right and left eyes was not found to be statistically significant

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