

Relationship between Postmortem Ethanol Level in Femoral Blood and Vitreous Humor

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Introduction : Determination of post mortem ethanol is one of the most frequency requested analysis in forensic toxicology, but many factors can influence evaluation of postmortem ethanol concentration so there is an enormous effort to find alternative sampling sites such as vitreous humor(1,2). Quantitative alcohol determination in a variety of postmortem specimens may provide important interpretive information(3). The main purpose of this study was to establish correlation between ethanol concentration in femoral venous blood (FVB) and vitreous humor (VH). **Methods :** Ethanol concentrations were determined in specimens of FVB and VH obtained from 500 forensic necropsies. The specimens were analysis in duplicate by headspace gas chromatography (HS-GC). The limit of detection (LOD) of ethanol in this study was .1mg/dlit. **Results :** The concentration of FVB ethanol was higher than VH in 97 specimens and in the other specimens VH was higher than FVB. Ethanol was present in FVB at a mean \pm SD concentration of 122 ± 60 mg/dL, compared with 133 ± 63 mg/dL in VH. The mean \pm SD of VH/FVB ratio of ethanol was 1.1 ± 0.2 . Pearson's correlation coefficient between them was 0.936. At ethanol concentration ≤ 100 mg/dL correlation coefficient was 0.737 and in concentration above 100mg/dL this value was 0.881. **Conclusion :** There is a good correlation coefficient between vitreous humor and femoral venous blood in determination of postmortem alcohol concentration and there is small difference between them, so vitreous humor can be used as an alternative sample to femoral venous blood for alcohol determination. **Refrences :** 1. Bilban.M, Skibin.L.presence Of alcohol in suicide victims.Forensic Sci In.2005; 147; S9-S12. 2. Olsen T, Hearn WL.Stability of ethanol in postmortem blood and vitreous humor in long- term refrigerated storage.J Anal Toxicol 2003; 27:517-19. 3. Kugelberg.FC, Jones.AW.Interpreting results of ethanol analysis in postmortem specimens. Forensic Sci In2007; 165:10-29.