

## Does ethyl Glucuronide in hair correlate with alcohol consumption? A cross-sectional study on Alcohol Dependent Patients

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### Abstract

**Background:** Ethyl Glucuronide (EtG) is a direct metabolite of alcohol. EtG in hair is proposed as a biomarker for assessment of long-term alcohol consumption.

**Objective:** To assess the association between Ethyl Glucuronide in hair with alcohol use.

**Method:** Using cross-sectional study design, ninety-one alcohol dependent patients (diagnosed as per International Classification of Diseases, Version-10) with last alcohol consumption within 24 hours were recruited after their consent. The subjective information included: socio-demographic details, alcohol use details and alcohol amount consumed in past three months (by beverage-specific quantity-frequency method). Three centimetre of hair from the posterior vertex region of the head was collected and analysed using gas chromatography–mass spectrometry. The obtained EtG values were compared and correlated with the amount of alcohol consumed.

**Result:** The mean age of the participants was 37.7 (SD:7.7) years. All participants used alcohol daily; country made liquor (CML) being the preferred beverage (51.6%). Mean quantity of alcohol consumed in past three months was 261.7 grams per person per day. The mean age of onset of daily alcohol consumption was 27.7 (SD:6.3) years and the mean age of onset of early morning drinking was 32.8 (SD:7.3) years. All hair samples showed hair EtG value higher than the cut-off (i.e. 30pg/mg). EtG values showed a positive correlation with the amount of alcohol consumed ( $p=0.05$ ). Kruskal-Wallis test showed statistically significant differences between the EtG in hair and the quantity of alcohol consumed (Chi-square= 10.32,  $p<0.05$ ,  $df=3$ ).

**Conclusion:** Hair EtG can be positively used to indicate chronic alcohol consumption.

### Biography:

Having completed her masters in Forensic Toxicology and with a degree in Analytical chemistry, she is currently pursuing her Ph.D in “Addiction Psychiatry” from National Drug Dependence Treatment Centre, All India Institute of Medical

Sciences. She has been exploring various drug testing methods for toxicology samples to derive analytical conclusions.

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