Assessing prevalence of alcohol consumption in early pregnancy: Self-report compared to blood biomarker analysis.

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BACKGROUND

Providing appropriate antenatal and postnatal care for women who drink alcohol in pregnancy is only possible if those at risk can be identified [1]. We aimed to compare the prevalence of alcohol consumption in the first trimester of pregnancy using self-report and blood biomarker analysis.

METHODS

Six-hundred routine blood samples taken at antenatal booking in the first trimester of pregnancy, were anonymously analysed for the presence of Carbohydrate Deficient Transferrin (CDT), a validated marker of chronic alcohol exposure (normalising 2-3 weeks from the start of abstinence) and Gamma-glutamyltransferase (GGT), a liver enzyme which can be elevated for 8 weeks after alcohol exposure. In a separate cohort, data from the same antenatal booking visit was collected from medical records documenting women's self-reported alcohol consumption.

RESULTS

* The percentage of women who reported alcohol intake in the first trimester was 0.8%. This compared to 74.1% of women who reported consuming alcohol before pregnancy.
* CDT analysis revealed a prevalence rate of 1.4% and GGT a prevalence rate of 3.5% in the first trimester of pregnancy.
* Although those with elevated CDT generally had high levels of GGT, only one person was positive for CDT and GGT.

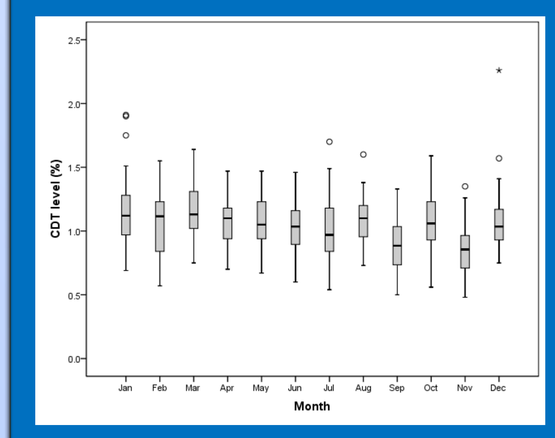

Figure 1: Box plots of CDT values per month

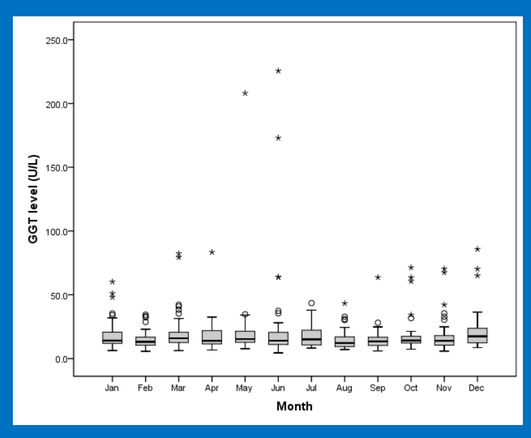

Figure 2: Box plots of GGT values per month

o = outlier, * = extreme outlier

Conflicts of Interest:
There were no conflicts of interest.

CONCLUSION

Results from CDT analysis and self-report were similar, but both may under-report. Self-report may be limited by factors such as recall bias, the patient-clinician relationship, expected social norms and fear of perceived judgement[2]. CDT only detects sustained high level drinkers and does not identify low to moderate drinkers[3]. GGT appeared to lack specificity, but it may have value in supporting findings from CDT analysis. Further studies using additional blood biomarkers, or a combination of blood biomarkers and self-report, may be beneficial in detecting a more detailed drinking history in pregnancy.

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Other references available on request

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