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## SHC 40 . MEASUREMENT UNCERTAINTY IN ETHANOL CONCENTRATIONS

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Uncertainty is a parameter associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurand. In this study, we aimed to calculate measurement uncertainty in ethanol test which is an important analytical determination required to assess whether an offence has been committed.

Serum ethanol levels were analyzed by Roche Cobas Integra 800. Uncertainty was calculated according to NORDEST guideline. Additionally, to investigate effect of uncertainty on patient results we screened all patient data between October 2015 and March 2016.

Measurement uncertainty in ethanol was 12.25%. The number of patients measured ethanol between October 2015 and March 2016 was 1178. Eight hundred and eighty-two of them were male, while 296 of them female. Two hundred and eighty of them were over the detection limit of ethanol testing according to instruction manual. Twenty-five of them were below the legal limit of 50 mg/dL for our country, while two hundred and fifty-five of them were over the legal limit for our country.

For ethanol, uncertainty value was below total allowable error (%25). As a new concept in forensic medicine, measurement uncertainty is a parameter to be calculated. Because accurate measurement of blood-ethanol concentration is very important with respect to forensic evidence, to inform high levels of conclusiveness in forensic and laboratory medicine and in related lawsuits.

Our study may help satisfy the need to develop more appropriate standard practices for forensic science purposes.

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