Objective blood alcohol measures confirm the limitations of questionnaires, offer increased clinical opportunities

December 15 2022

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Patients in the Emergency Room (ER) should be blood-tested for hazardous drinking rather than evaluated by questionnaires alone,
according to a new study comparing alcohol use screening methods. A sizeable minority of patients attend the ER for alcohol-related reasons (12–15% in the UK).

That proportion is growing, a US study has found. The ER offers valuable opportunities to identify hazardous drinking and intervene with treatments that can help patients reduce their alcohol use. This requires efficiently and reliably screening ER patients for risky consumption. Validated methods include the Alcohol Use Disorders Identification Test (AUDIT)—and its shorter version, AUDIT-C—which are among the most frequently used screening questionnaires.

Another, the Timeline Followback Questionnaire (TLFB), is a retrospective self-administered survey estimating daily alcohol consumption over a specific prior period. In contrast, phosphatidylethanol (PEth), a metabolite of ethanol, is a direct and objective blood marker of chronic alcohol use. PEth can be detected two or more weeks after drinking and does not seem to be influenced by patient characteristics, such as age, gender, and other health conditions.

Although studies have pointed to the advantages of PEth values over questionnaires, their use has not been investigated in the general adult ER population. For the study in Alcoholism: Clinical & Experimental Research, researchers from the Netherlands, examined the correlation between PEth, AUDIT, and TLFB values in those patients.

Researchers worked with 301 patients who visited the ER in 2019 for any reason requiring blood withdrawal; 57% were male and the mean age was 56. Participants completed the AUDIT, which categorizes risk level into four zones with corresponding interventions, and the two-week and 24-hour TLFB questionnaires.

In addition, their blood was tested for PEth, which takes the form of
varied but structurally similar molecules (homologues). Two PEth homologues were measured in this study, yielding two PEth scores per participant. These were used to categorize drinking into three levels: light or abstinent, moderate, or excessive; cut-off points varied by homologue. Investigators also tracked each participant's age, gender, and reason for ER attendance. They used statistical analysis to examine the correlations between AUDIT, TLFB, and PEth values.

The study found only a moderate correlation between AUDIT scores and PEth values. Divergences typically took the form of low AUDIT measures versus high PEth values. Of patients with low AUDIT scores, one in nine or one in six (depending on the homologue used) had PEth results indicating moderate or excessive drinking.

Of patients with PEth values indicating high risk, 25% or 40% (depending on the homologue) scored in the lowest AUDIT category. Among patients whose PEth values indicated moderate alcohol use, large majorities (66% and 78%) appeared as low risk on the AUDIT. PEth and two-week TLFB scores were more highly correlated, likely reflecting their parallel recent retrospective approaches. The correlation between PEth and the 24-hour TLFB was low, probably because drinking could have taken place more than 24 hours before the ER visit.

These findings in a relatively broad patient population strengthen the case for using PEth as an additional screening instrument in the ER. They add to evidence that patients with problematic alcohol use as measured by objective PEth tests are not routinely identified by the subjective AUDIT evaluation. This likely results in missed opportunities for thorough evaluation and intervention. Additional research is needed to compare PEth with a shorter-term biological marker of alcohol intake.

More information: Carolien Verheij et al, Screening for hazardous

Provided by Research Society on Alcoholism

Citation: Objective blood alcohol measures confirm the limitations of questionnaires, offer increased clinical opportunities (2022, December 15) retrieved 22 December 2022 from https://medicalxpress.com/news/2022-12-blood-alcohol-limitations-questionnaires-clinical.html

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