Systematic review of alcohol screening tools for use in the emergency department

Jones LA

CRD summary
This review concluded that the fast alcohol screening tool (FAST) appeared to be the best tool for accurately identifying alcohol misuses within emergency department patients. Limitations in the review and included studies, including not considering study quality when drawing conclusions, mean that the author's conclusion should be interpreted with caution.

Authors' objectives
To determine which alcohol screening tool is the most accurate for identifying alcohol misuse in patients in the emergency department.

Searching
MEDLINE, CINAHL, PsycINFO, and the Cochrane Library were searched. Search terms were reported, but search dates were not. Seven relevant online journals were searched. Reference lists of retrieved studies were screened. Author and citation searches were also conducted.

Study selection
Studies that evaluated the accuracy of four specified alcohol screening tools against the reference standard (WHO's AUDIT or standardised diagnostic criteria for the detection of hazardous drinking behaviour) in adults attending the emergency department were eligible for inclusion. The four eligible tools were the fast alcohol screening tool (FAST), the Paddington alcohol test (PAT), the rapid alcohol problem screening (RAPS-4) tool, or the TWEAK tool. Eligible participants were adults (aged 18 or over) attending emergency departments with an alcohol-related injury or illness. Outcome measures of interest were sensitivity, specificity and positive and negative predictive values.

Studies were conducted in USA and the UK. Four studies were described as "probability samples", two as opportunistic samples, and one as a random sample. The reference standards used in the included studies were the International Classification for Disease (ICD)-10 criteria for harmful drinking and alcohol dependence, the alcohol use disorders identification test (AUDIT) criteria, and the Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV criteria for alcohol dependence and alcohol abuse. The age of participants ranged from 18 to over 50 years; the proportion of men ranged from 38 to 59% (where reported). The prevalence of alcohol abuse and dependence ranged from 36 to 43%.

The author did not state how studies were selected for inclusion.

Assessment of study quality
Greenhalgh's checklist was used to assess validity and a narrative overview of the studies was presented.

The author did not state how many reviewers performed the quality assessment.

Data extraction
The author did not state what data were extracted or how many authors performed the data extraction. Data were presented on sensitivity, specificity, and positive and negative predictive values, together with 95% confidence intervals (CIs).

Methods of synthesis
A narrative synthesis was presented. Estimates of sensitivity, specificity and positive and negative predictive values were summarised in a table.

Results of the review
Seven studies reporting 13 evaluations were included (at least 6,447 participants). Some studies evaluated more than one tool and some assessed accuracy separately for the detection of harmful drinking or alcohol dependence/abuse. Methodological limitations were identified with all included studies, but a systematic summary of study quality was not presented. The studies that assessed the RAPS and FAST tool were at risk of incorporation bias as these tools were shortened versions of the reference standard tools.

TWEAK tool: The sensitivity of the TWEAK tool ranged from 84% (95% CI 81 to 87) to 87% (95% CI 84 to 90) and specificity ranged from 76% (95% CI 72 to 80) to 86% (95% CI 84 to 88) based on two studies, three comparisons.

Rapid alcohol problem screening (RAPS-4) tool: The sensitivity of the RAPS-4 tool ranged from 55% (95% CI 52 to 58) to 93% (95% CI 92 to 94) and specificity ranged from 78% (95% CI 74 to 82) to 93% (95% CI 90 to 96) based on three studies, five comparisons.

Fast alcohol screening tool (FAST): The sensitivity of the FAST tool ranged from 93% (95% CI 89 to 95) to 97% (95% CI 94 to 100) and specificity ranged from 88% (95% CI 84 to 90) to 91% (95% CI 85 to 97) based on two studies, two comparisons.

Paddington alcohol test (PAT): The sensitivity of the PAT tool ranged from 70% (95% CI 64 to 75) to 97% (95% CI 95 to 99) and specificity ranged from 85% (95% CI 81 to 88) to 88% (95% CI 85 to 91) based on two studies, two comparisons.

Authors' conclusions
Fast alcohol screening tool (FAST) appeared to be the best tool for accurately identifying alcohol misuses within emergency department patients.

CRD commentary
The review addressed a clear question; inclusion criteria were defined. The literature search appeared adequate for published studies. It was unclear whether any language or publication restrictions were applied, but specific searches were not conducted for unpublished data, so there is a possibility of language and publication bias. Details on the review process were not reported, but the review only had one author, which suggested that appropriate steps were not taken to minimise bias and errors.

Study quality was assessed using some relevant criteria, but the results of the assessment were not reported in a structured format, which made them difficult to interpret (although they were discussed). A narrative synthesis was appropriate given the small number of clinically heterogeneous studies. The relative accuracy of the different tests was not discussed in terms of the methodological limitations of the included studies, so the differences in results between studies were attributed to differences in accuracy of the screening tools rather than potential sources of bias and variation among the studies; this may have affected estimates of accuracy. Estimates of positive and negative predictive values were summarised in a table; although author stated that the prevalence (pre-test probability of disease) was similar across the studies, this was not reported for each study. This information was essential to allow interpretation of predictive values.

This review (and the included studies) had several methodological limitations and was poorly structured. The author's conclusion does not consider the small number of studies and potential influence of study quality on results, so should be interpreted with caution.

Implications of the review for practice and research
The author did not state any implications for practice or research.

Funding
Not stated.

Bibliographic details
Jones LA. Systematic review of alcohol screening tools for use in the emergency department. Emergency Medicine
Indexing Status
Subject indexing assigned by NLM

MeSH
Alcoholism/prevention & control; Emergency Service, Hospital; Humans; Mass Screening/methods; Sensitivity and Specificity; Surveys and Questionnaires

AccessionNumber
12011002372

Date bibliographic record published
01/06/2011

Date abstract record published
12/10/2011

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.