Table 1

Author, country, date	Patient group	Study type	Outcomes	Key results	Study weaknesses
Lamell CW <i>et al</i> , 1999, USA	28 patients aged 1–9 with tongue lacerations of which 22 evaluated for result, managed by predetermined selection criteria- 1. Gaping wound at rest 2. Lateral border wounds 3. Active haemorrhage	Observational Study	Difference in quality of result with suturing or not Post-trauma morbidity	No significant difference No significant difference	25% of patients had no follow-up Lack of calibration of clinicians Small sample size

Is skin turgor reliable as a means of assessing hydration status in children?

Report by O Fayomi, Specialist Registrar Accident & Emergency Medicine, Wycombe General Hospital
Search checked by I Maconochie, R Body, Consultant Paediatric Accident & Emergency Medicine; Clinical Research Fellow

St Mary's Hospital, London

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A short cut review was carried out to establish whether skin turgor is a reliable indicator of hydration status in children. 478 papers were found in Medline and 107 in Embase using the reported searches, of which 4 presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of three of these papers are tabulated (the fourth is a partial review). It is concluded that skin turgor is only moderately reliable at indicating hydration status in children.

Clinical scenario

A 3-year-old girl is brought to the emergency department with a 2 day history of vomiting and diarrhoea. You wish to estimate

her hydration status to determine whether rehydration therapy is needed and remember being taught that increased skin turgor is associated with dehydration. You wonder how reliable this clinical sign actually is.

Three part question

In [children attending the emergency department with suspected dehydration] [what is the degree of variation between observers] when [performing assessment of skin turgor]

Search strategy

Medline 1966–2006 November Week 3 and Embase 1980–07/04.
 Medline: (turgor.af. OR (clinical sign\$ OR examination).mp. OR exp Physical Examination/) AND (exp Dehydration/OR dehydrat\$.mp. OR exp Hypovolemia/OR (hypovolaem\$ OR hypovolaem\$.mp.) AND (Best BETs Paediatric filter (maximally sensitive)))

Embase: (turgor.af. OR (clinical sign\$ OR examination).mp. OR exp Physical Examination/) AND (exp Dehydration/OR dehydrat\$.mp. OR exp Hypovolemia/OR (hypovolaem\$ OR hypovolaem\$.mp.) limit to Child, Unspecified Age

Search outcome

478 papers were found using Medline and 107 using Embase, three of which were relevant to the topic of interest. One relevant systematic review summarised two of these papers but included no additional papers (Steiner *et al*, 2004).

Table 2

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Gorelick M, <i>et al</i> , 1997, USA	84 patients, Age (1 month to 5 years)	Prospective cohort study Urban Paediatric Emergency Hospital 2 out of 17 independent assessors	Level of observer agreement	k=0.55	Small numbers Blinding Convenience sample
Duggan C, <i>et al</i> , 1997, Egypt	100 patients Age (2 months to 2 years)	Prospective cohort study Gastroenteritis Unit	Level of observer agreement	k1=0.36 95% CI (0.525–0.203), k2=0.511 95% CI (0.66–0.362), k3=0.417 95% CI (0.568–0.266)	Convenience sample Standardised assessment of skin turgor
Otieno H, <i>et al</i> , 2004, Kenya	100 consecutive patients	3 independent assessors Prospective cohort study Age (2 days to 10 years 11 months) Rural district hospital 4 independent assessors	Level of observer agreement	k=0.55 95% CI (0.4–0.7)	Heterogenous group Nil exclusion criteria stated

Comment(s)

Dehydration is an important cause of childhood morbidity and mortality worldwide. Skin turgor is generally accepted as part of the clinical assessment of hydration status in children being a quick, non-invasive test that can be performed at the bedside. Unrecognised fluid deficit can lead to electrolyte and acid-base disturbances as well as end organ damage. Conversely over estimation of fluid deficit can result in inappropriate rehydration therapy. The value of any clinical test is a function of its ability to detect a particular condition and its reliability. The limited number of studies which have various sources of bias show only moderate agreement for inter-observer reproducibility when skin turgor is used to clinically assess hydration status in children.

► CLINICAL BOTTOM LINE

Skin turgor measurement, whilst part of the initial assessment of children with suspected dehydration, is only moderately reliable and other clinical signs should be sought to confirm this diagnosis.

Steiner MJ, De Walt DA, Byerley JS. Is this child dehydrated? *JAMA* 2004;**291**:2746–54.

Gorelick M, Shaw K, O'Murphy K. Validity and reliability of clinical signs in the diagnosis of dehydration in children. *Paediatrics* May 1997;**99**:1–6.

Duggan C, Refat M, Hashem M, *et al.* Interrater agreement in the assessment of dehydration in infants. *Journal of Tropical Paediatrics* 1997;**43**:119–21.

Otieno H, Were E, Ahmed I, *et al.* Are bedside features of shock reproducible between different observers. *Archives of Disease in Children* 2004;**89**:977–79.

Is ED-based Brief Intervention worthwhile in children and adolescents presenting with alcohol-related events?

Report by Maria Ahmed, MPH Student
Search checked by Kevin Mackway-Jones
University of Manchester, UK

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A short cut review was carried out to establish whether brief psychotherapeutic intervention is worthwhile in children and adolescents presenting to emergency departments with alcohol-related events. 560 papers were found using the reported searches, of which 5 presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. It is concluded that brief psychotherapeutic interventions are indeed worthwhile in such patients.

Clinical Scenario

A 16-year-old male arrives at the emergency department having sustained a head injury after falling over whilst intoxicated. You have heard about the recent institution of an Alcohol Health Service in the department comprising two designated Alcohol Health Workers who administer brief psychotherapeutic interventions to children and adults presenting with alcohol-related events. Having assessed and treated the patient, you wonder whether it is worthwhile referring him on to them.

Three-part question

In [children and adolescents presenting to the emergency department with an alcohol-related event], is [Brief Intervention better than standard care] at [reducing subsequent alcohol consumption, reducing alcohol-related problems,

reducing emergency department re-attendance and improving psychosocial well-being?]

Search strategy

MEDLINE 1966 to November week 3 2006: {[alcohol\$.mp. OR ethanol.mp. OR exp Ethanol/OR booze\$.mp. OR exp Alcohol Drinking/] AND (addict\$.mp. OR hazard\$.mp. OR problem\$.mp. OR binge\$.mp. OR abuse\$.mp. OR misuse\$.mp. OR dependence.mp.)] OR [alcoholism.mp. OR exp Alcoholism/OR exp Alcoholic Intoxication/]} AND [brief intervention\$.mp. OR (brief.mp. AND intervention\$.mp.) OR exp Psychotherapy, Brief/OR exp Counseling/OR counsel\$.mp. OR exp Health Personnel/OR health worker.mp.] AND [exp Emergency Service, Hospital/OR emergency department\$.mp. OR (accident and emergency).mp. OR exp Trauma Centers/] LIMIT to [humans AND English language]

EMBASE 1980 to 2006 week 49: {[alcohol\$.mp. OR exp ALCOHOL/OR ethanol.mp. OR booze\$.mp. OR exp Alcohol Consumption/] AND (addict\$.mp. OR hazard\$.mp. OR problem\$.mp. OR binge\$.mp. OR abuse\$.mp. OR misuse\$.mp. OR dependence.mp.)] OR [alcoholism.mp. OR exp ALCOHOLISM/OR exp Drug Dependence/OR exp Drug Misuse/OR exp Alcohol Abuse/OR exp ALCOHOL INTOXICATION/]} AND [brief intervention\$.mp. OR (brief.mp. AND intervention\$.mp.) OR exp PSYCHOTHERAPY/OR exp COUNSELING/OR counsel\$.mp. OR exp Health Care Personnel/OR health worker.mp.] AND [exp Emergency Medicine/OR exp Emergency Health Service/OR emergency department\$.mp. OR exp emergency ward/OR (accident and emergency).mp. OR trauma center.mp.] LIMIT to [humans AND English language] PsycINFO 1967 to June week 4 2006: {[alcohol\$.mp. OR ethanol.mp. OR exp ETHANOL/OR booze\$.mp.) AND (addict\$.mp. OR hazard\$.mp. OR problem\$.mp. OR binge\$.mp. OR abuse\$.mp. OR misuse\$.mp.)] OR [alcoholism.mp. OR exp ALCOHOLISM/OR exp Alcohol Drinking Patterns/OR exp Drug Dependency/OR exp ALCOHOL ABUSE/OR exp Alcohol intoxication/]} AND [brief intervention\$.mp. OR (brief.mp. AND (exp INTERVENTION/OR intervention\$.mp.)) OR exp Brief Psychotherapy/OR exp Counseling/OR counsel\$.mp. OR exp Health Personnel/OR health worker.mp.]

AND [exp Emergency Services/OR emergency department\$.mp. OR (accident and emergency).mp. OR trauma center\$] LIMIT to [humans AND English language]

CINAHL 1982 to December week 1 2006 {[alcohol\$.mp. OR ethanol.mp. OR exp Alcohol, Ethyl/OR booze\$.mp. OR exp Alcohol Drinking/] AND (addict\$.mp. OR hazard\$.mp. OR problem\$.mp. OR binge\$.mp. OR abuse\$.mp. OR misuse\$.mp. OR dependence.mp.)] OR [alcoholism.mp. OR exp ALCOHOLISM/OR exp Alcohol abuse/OR exp Alcoholic Intoxication/]} AND [brief intervention\$.mp. OR (brief.mp. AND intervention\$.mp.) OR exp PSYCHOTHERAPY/OR exp COUNSELING/OR counsel\$.mp. OR exp Health Personnel/OR health worker.mp.] AND [exp Emergency Service/OR emergency department\$.mp. OR (accident and emergency).mp. OR exp Trauma Centers/]

LIMIT to [humans AND English language] The Cochrane Library Issue 4, 2006: alcohol AND brief intervention AND emergency department

Outcome

560 articles were found in all databases, of which 5 were relevant and of sufficient quality for inclusion.

Comments

Tait *et al* (2004) and the follow-up study (Tait *et al*, 2005) demonstrated that brief intervention significantly enhanced attendance at a treatment agency, significantly improved