

BEST EVIDENCE TOPIC REPORTS

Towards evidence based emergency medicine: best BETs from the Manchester Royal Infirmary

Edited by K Mackway-Jones

Best evidence topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but rather contain the best (highest level) evidence that can be practically obtained by busy practising clinicians. The search strategies used to find the best evidence are reported in detail in order to allow clinicians to update searches whenever necessary.

The BETs published below were first reported at the Critical Appraisal Journal Club at the Manchester Royal Infirmary.¹ Each BET has been constructed in the four stages that have been described elsewhere.² The four topics covered in this issue of the journal are:

- Nebulised ipratropium bromide bronchiolitis
- Gag reflex and intubation
- Bell's palsy and prednisolone
- Glue or sutures for facial lacerations in children

1 Carley SD, Mackway-Jones K, Jones A, *et al.* Moving towards evidence based emergency medicine: use of a structured critical appraisal journal club. *J Accid Emerg Med* 1998;15:220-2.
 2 Mackway-Jones K, Carley SD, Morton RJ, *et al.* The best evidence topic report: a modified CAT for summarising the available evidence in emergency medicine. *J Accid Emerg Med* 1998;15:222-6.

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Nebulised ipratropium bromide and bronchiolitis
 Report by Martin Smith, *Specialist Registrar*
 Search checked by Mohammed Al Zarad, *Research Fellow*

Clinical scenario
 A 6 month old baby with three day history of coryzal symptoms, increasing cough and wheeze presents to the emergency department.

Your clinical diagnosis is bronchiolitis. You wonder whether the addition of nebulised ipratropium will improve the clinical condition.

Three part question
 In [infants with acute bronchiolitis] does [treatment with nebulised ipratropium bromide] reduce [the clinical severity or the length of stay]?

Table 1

Author, date, and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Henry <i>et al</i> , 1983, UK ¹	66 infants (7 to 52 weeks) Ipratropium v saline	PRCT	Clinical severity score Parental/nurse subjective assessment	No significant change No significant difference	Randomisation and blinding not explained. No basic data or results presented
Wang <i>et al</i> , 1992, Canada ²	62 children (2 months to 2 years) Salbutamol or placebo v ipratropium or placebo	PRCT	Pulse oximetry Clinical severity score Hospitalisation	No significant change No significant change No significant difference	Possible selection bias as all patients received emergency room treatment Infrequent observations
Schuh <i>et al</i> , 1992, Canada ³	69 children (6 weeks to 2 years) Albuterol and saline v albuterol and ipratropium	PRCT	Respiratory rate Accessory muscle score Wheeze score Oxygen saturation Hospitalisation rate	No significant difference No significant difference No significant difference No significant difference 17 v 10	
Chowdhury <i>et al</i> , 1994, Saudi Arabia ⁴	89 children (6 weeks to 24 months) Ipratropium alone v salbutamol alone v ipratropium and salbutamol v saline	PRCT	Clinical severity score Admission days	No significant difference in all groups No significant difference in all groups	Small groups with no blinding. Not all patients included
Goh <i>et al</i> , 1997, Singapore ⁵	89 children Nebulised salbutamol v nebulised ipratropium v nebulised saline v humidified oxygen	PRCT	Clinical severity score Length of stay	No significant difference No significant difference	Small numbers with possible type 2 error. Second control group added later

PRCT = prospective randomised controlled trial.

Search strategy

Medline 1966 to 7/99 using the OVID interface. ({exp bronchiolitis OR exp bronchiolitis, viral OR exp respiratory syncytial virus infections OR exp respiratory syncytial virus, human OR RSV.mp OR bronchiolitis.mp} AND {atrovent.mp OR exp ipratropium OR ipratropium.mp}) LIMIT to human AND english.

Search outcome

Thirteen papers were found of which eight were irrelevant or of insufficient quality. The remaining five papers are shown in table 1.

Comments

All the trials found have faults; however not

one showed a benefit from nebulised ipratropium in this condition.

Clinical bottom line

Nebulised ipratropium bromide is not indicated in bronchiolitis.

- 1 Henry RL, Milner AD, Stokes GM. Ineffectiveness of ipratropium bromide in acute bronchiolitis. *Arch Dis Child* 1983;58:925-6.
- 2 Wang EE, Milner R, Allen U, et al. Bronchodilators for treatment of mild bronchiolitis: a factorial randomised trial. *Arch Dis Child* 1992;67:289-93.
- 3 Schuh S, Johnson D, Canny G, et al. Efficacy of adding nebulized ipratropium bromide to nebulized albuterol therapy in acute bronchiolitis. *Pediatrics* 1992;90:920-3.
- 4 Chowdhury D, al Howasi M, Khalil M, et al. The role of bronchodilators in the management of bronchiolitis. *Ann Trop Paediatr* 1995;15:77-84.
- 5 Goh A, Chay OM, Foo AL, et al. Efficacy of bronchodilators in the treatment of bronchiolitis. *Singapore Med J* 1997;38: 326-8.

Gag reflex and intubation

Report by Kevin Mackway-Jones, *Consultant*
 Teacher checked by Chris Moulton, *Senior Lecturer*

Clinical scenario

A 25 year old woman is brought to the emergency department having taken an overdose of drugs. She will require gastric lavage but you consider that her airway is at risk. You call the duty anaesthetist who examines her and states that she does not need intubation as her gag reflex is present. You wonder whether gag reflex is a good test to predict the need for intubation.

Three part question

In [an adult with decreased conscious level] is [the gag reflex] a [good predictor of the need for intubation]?

Search strategy

Medline 1966 to 7/99 using the OVID interface. [gag reflex.mp].

Search outcome

Altogether 133 papers were found of which 128 were irrelevant to the study question or of insufficient quality for inclusion. The remaining five papers are shown in table 2.

Comment

The high incidence of absence of the gag reflex in normal volunteers argues against its usefulness as a specific predictor of need for intubation. It is surprising, therefore, that there is a high specificity in the clinical study of poisoned patients. In this study the sensitivity is too low to allow presence of gag to rule out (SnOut) the need for intubation. Other reflexes may be more predictive.

Clinical bottom line

The presence or absence of the gag reflex does not accurately predict the need for intubation.

- 1 Kulig K, Rumack BH, Rosen P. Gag reflex in assessing level of consciousness. *Lancet* 1982;i:565.
- 2 Moulton C, Pennycook A, Makower R. Relation between Glasgow coma scale and the gag reflex. *BMJ* 1991;303: 240-1.

Table 2

Author, date, and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Kulig et al, 1982, USA ¹	38 emergency room patients Gag reflex assessed	Observational	Presence of gag reflex matched to conscious level	12 patients with a gag reflex were significantly obtunded 1 patient without a gag reflex was fully awake	
Moulton et al, 1991, UK ²	111 emergency department patients requiring neurological observation Gag reflex and GCS assessed	Observational	Presence of gag reflex matched to conscious level	Gag reflex may be significantly attenuated or absent at all levels of GCS In more conscious patients (GCS >8) 64% of those exposed to drugs had depressed gag compared with 8% of those with head injury	
Chan et al, 1993, Australia ³	414 patients with poisoning attending an emergency department Prediction of need for intubation	Diagnostic	Absence of gag on admission GCS <8	Sensitivity 70%, specificity 100% Sensitivity 90%, specificity 95%	Gold standard is clinical judgment
Davies et al, 1995, UK ⁴	140 healthy volunteers Gag reflex assessed	Observational	Presence of gag reflex	Gag reflex was absent in 37% of subjects	
Leder, 1996, USA ⁵	63 healthy volunteers Gag reflex assessed	Observational	Presence of gag reflex	Gag reflex was absent in 13% of subjects	

GCS = Glasgow coma score.