Neuromuscular blockers for prehospital intubation in traumatic brain injury

This study was carried out on all patients admitted to a level 1 trauma centre between January 1998 and June 2003. It has previously been shown that by using neuromuscular blocking agents (NMBAs) in the prehospital setting, the success rate for intubation is improved. However, some recent evidence suggests that the use of such agents worsens outcome in head injury. A trauma registry was used to identify patients who had a head Abbreviated Injury Scale score of 3 or more, and the records were matched with prehospital databases. Patient stratification using the prehospital Glasgow Coma Score (GCS) was also used and outcomes included mortality, with good outcome taken as survival to discharge with a GCS of 14/15. A total of 3052 patients were identified, and 2012 of these had complete prehospital data. The intubation rates were 17% for the mild head injuries, 58% for moderate head injuries, and 95% for severe cases. NMBAs were used in 72% of the patients intubated. The patients who received NMBAs before intubation were significantly less likely to be hypotensive or require cardiopulmonary resuscitation, and the unadjusted mortality for patients intubated with NMBAs was 25% compared with 37% intubated without NMBAs (p = 0.001). Patients intubated with the use of NMBAs were significantly more likely to survive and have a good outcome, when adjusted for confounding variables. The results of this study may help to shape future prehospital care, but implications outside of the US are unclear given the very different systems currently in place.

Laboratory diagnosis of heart failure

Emergency physicians are traditionally used to diagnose heart failure clinically, rather than on the basis of laboratory tests. However, this situation may be about to change. B type natriuretic peptide (BNP) is a cardiac neuropeptide that, when measured in blood, has been useful at differentiating shortness of breath secondary to congestive cardiac failure from dyspnea of an alternative aetiology. NT-proBNP is an inactive amino terminal fragment formed when proBNP is split to form BNP, and has also been shown to aid diagnosis of dyspnea secondary to congestive cardiac failure. This study aimed to compare the diagnostic accuracy of BNP and NT-proBNP for congestive cardiac failure in an emergency setting. The results showed that both tests may be equally of use. Although this study is theoretically of interest, it is unlikely to impact immediately upon current practice—emergency physicians should retain their stethoscopes for a little longer.

Emergency management of atrial fibrillation

The treatment of atrial fibrillation in the emergency department seems rarely to be straightforward. This Belgian retrospective study adds little to help to sort out the confusion. The authors report some success with certain drugs, notably digoxin and amiodarone, but do not explain what criteria were used to determine which treatment to employ and what protocol (if any) was followed.

Therapeutic hypothermia after cardiac arrest

The potential benefit of any intervention after cardiorespiratory arrest is of interest to many emergency physicians, given that even if a spontaneous circulation is regained, neurological outcome is often rather poor. The objective of this meta-analysis was to assess whether induced hypothermia improves neurological recovery in primary cardiac arrest. Papers reviewed included randomised and quasi-randomised controlled trials, in which patients had been successfully resuscitated after arrest, had received therapeutic hypothermia within six hours of arrival at the emergency department, and in whom neurological outcome had been considered. Hypothermia was achieved in several ways including ice packs, cooling blankets, and a helmet containing aqueous glycerol. The data suggest that mild therapeutic hypothermia improves outcome, but its effect upon long term outcome remains unclear. In addition, the optimum length of therapy, best method of application, and feasibility of delivery on a large scale are unknown.

Decision rule for knee x rays in children

The Ottawa Knee rule is widely used for the assessment of acute knee injuries in adults, but patients under 18 years of age were excluded during the development of these rules. This prospective study from three US hospitals aimed to assess the performance of a decision rule for radiography in children presenting with acute knee injuries. Patients aged 2–18 years were included in the study, and radiographs were taken in all, in keeping with their standard care. Exclusion criteria included: injury more than one week old, a history of knee surgery on the injured knee, a “superficial” injury, a chronic orthopaedic disease such as osteogenesis imperfecta, re-presentation for re-evaluation of the same injury, or referral from elsewhere with radiographs having already been performed. The characteristics observed in the examination included ability to weight bear for four steps in the emergency department, the ability to actively or passively flex the knee to 90 degrees, the presence and location of any bony tenderness to palpation, and clinical evidence of a joint effusion. Fractures were found in 15 of the 146 children enrolled (10%). Sixty nine patients (47%) were unable to weight bear either after the injury or in the emergency department. Application of a clinical decision rule comprised solely of inability to weight bear identified all patients with a fracture. Several patients without bony tenderness and able to flex to 90 degrees were found to have fractures, and these criteria did not improve sensitivity or negative predictive value. The authors suggest that the application of the rule in this study would have reduced the number of radiographs by 53% without missing any fractures.

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When to discharge after abdominal stabbing

During a seven year period, the authors collected data on 650 “asymptomatic” and haemodynamically stable patients who presented with abdominal stab wounds to their level 1 trauma centre. Sixty eight patients underwent abdominal surgery, and no patients required surgery after 12 hours of observation. On this basis, the authors conclude that it is likely that such patients could be safely discharged with little likelihood of a missed injury after 12 hours.


Steroids in paediatric pneumococcal meningitis

The most common cause of bacterial meningitis in children in many parts of the world is Streptococcus pneumoniae, and it carries high rates of morbidity and mortality. Among children aged less than 15 years who were resident in a region of New South Wales, Australia between January 1994 and January 1999, there were 122 cases of pneumococcal meningitis identified. These resulted in mortality or permanent morbidity in 45% of the children. Interestingly, delay in diagnosis was not associated with an increase in mortality, but was associated with an increased morbidity. Corticosteroids used early, either before or with parenteral antibiotics, were found to protect against death or severe morbidity. The results of this study support those of previous studies and underline the importance of the development and implementation of relevant guidelines.


Antibiotics for meningococcal prophylaxis

After a case of meningococcal disease has been diagnosed and notified, it is routine to consider prophylactic antibiotics for close contacts. This review concluded that rifampicin, ciprofloxacin, and ceftriaxone were effective in the eradication of carriage of Neisseria meningitidis. The authors did raise some concerns about the use of rifampicin in view of the possibility of development of resistance following treatment.


Antibiotics no benefit for acute laryngitis in adults

With recent changes in healthcare delivery in the UK, emergency physicians appear to be seeing more clinical problems that were traditionally considered to be within the realms of the general practitioner. This systematic review found two randomised controlled trials comparing antibiotic therapy with placebo in acute laryngitis. The first compared penicillin V with placebo, and found no significant differences between symptoms or voice quality at follow up. The second trial compared erythromycin with placebo, and although there were no significant differences in voice quality, at one week there were fewer vocal symptoms described by the treatment group. The clinical bottom line is probably that antibiotics should not be prescribed for acute laryngitis in the first instance.


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