Ultrasound, emergency department staff, and pneumoperitoneum

Early confirmation of pneumoperitoneum is important in the management of surgical patients with suspected hollow organ rupture. Plain radiology to detect free air is acknowledged to be unreliable, especially as erect positioning of the acutely unwell patient may not be possible. This study from Taiwan compares the ability of ultrasound and plain radiography to detect pneumoperitoneum in the emergency department. Altogether 188 patients with suspected hollow organ rupture were investigated with plain chest radiographs taken in the erect position, followed by the left lateral decubitus position if the erect film showed no free air. They were then assessed by ultrasound performed by either the emergency department surgeon or physician on duty who had been appropriately trained in its use for the detection of free air. Results were compared with subsequent findings at laparotomy. Ultrasound had improved sensitivity, negative predictive value, and positive predictive value compared with plain radiography. The use of ultrasound was only feasible by having emergency department staff trained in its use, to prevent dependence on out of hours radiology staff.

Amiodarone versus lidocaine for shock resistant ventricular fibrillation

Intravenous amiodarone has an earlier onset of action compared with lidocaine and resulted in amiodarone being used with increasing frequency in the management of life threatening cardiac arrhythmias. This Canadian paper provides evidence to support its use in ventricular fibrillation (VF) in a prehospital setting. A prospective double blind randomised controlled trial compared the use of lidocaine (lignocaine) with amiodarone in the treatment of shock resistant VF. A total of 347 patients, with an out of hospital VF arrest, responsive to three defibrillation shocks, epinephrine (adrenaline) and a further shock, or recurrent VF after successful defibrillation, were enrolled. They were randomised to either amiodarone plus lignocaine placebo, or lignocaine plus amiodarone placebo. Results were given as survival to admission to intensive care from the emergency department. There was a survival advantage of 22.8% in the amiodarone group compared with those receiving lignocaine. However, no results were given for survival to discharge.

Early intravenous salbutamol for severe acute asthma in children

Emergency treatment of acute asthma in children usually follows well established guidelines. The results of this double blind randomised controlled trial favours an earlier use of intravenous salbutamol. The trial included 55 children with severe acute asthma, and compared the use of nebulised ipratropium with an early administration of a bolus of intravenous salbutamol. Initial management for all children included nebulised salbutamol, but then if symptoms persisted at 20 minutes, treatment was randomised to three groups: 15 µg/kg intravenous salbutamol (lignocaine) with amiodarone in the treatment of shock resistant VF. A total of 347 patients, with an out of hospital VF arrest, responsive to three defibrillation shocks, epinephrine (adrenaline) and a further shock, or recurrent VF after successful defibrillation, were enrolled. They were randomised to either amiodarone plus lignocaine placebo, or lignocaine plus amiodarone placebo. Results were given as survival to admission to intensive care from the emergency department. There was a survival advantage of 22.8% in the amiodarone group compared with those receiving lignocaine. However, no results were given for survival to discharge.

Young patients are not mentioned at any point. Presumably, this reflects a relative lack of input from emergency physicians, who need to become familiar with these recommendations and implement local guidelines in conjunction with the respiratory team to allow training of nursing staff to enable early implementation of NIV for appropriate patients.

British Thoracic Society guidelines on non-invasive ventilation

This is the latest publication from the British Thoracic Society outlining standards for the use of all forms of non-invasive ventilation (NIV) and continuous positive Airways pressure (CPAP) for patients in acute respiratory failure. It is a robust and comprehensive document that reviews the available literature to provide evidence based standards of care. It sets minimum standards for the provision of an acute NIV service and provides guidance on how this may be achieved. The authors examine which patients may benefit from NIV or CPAP and give a list of indications and contraindications. They describe the optimum application of different modes of ventilation, define minimal monitoring standards, and address issues of treatment failure. There is discussion on areas that may benefit from further research and facilitation of data collection for audit.

The methodology was uncomplicated: a standard literature search for a review article, All recommendations have been given in a grade A-D according to the level of evidence upon which they are based. The guide begins with a history of the use of NIV, but leads on quickly to a summary of evidence based recommendations. There is a full review of the different modes of NIV available and an explanation of the different patient-machine interfaces available. The use of NIV and or CPAP is considered in a wide range of conditions (ranging from COPD and pulmonary oedema to chest trauma and adult respiratory distress syndrome). Indications are clearly laid out, making this document not only an easily accessible practical guide, but also an authoritative text on the subject.

Considering that acute respiratory failure is a common cause for presentation to emergency departments, it is disappointing that this detailed document completely fails to mention the role of the emergency physician in initiating NIV. Indeed, the document has a long list of healthcare professionals who have been demonstrated to be efficient in the implementation of NIV from respiratory and intensive care physicians to lung function technicians and physiotherapists, but emergency physicians or nurses are not mentioned at any point. Presumably, this reflects a relative lack of input from emergency physicians, who need to become familiar with these recommendations and implement local guidelines in conjunction with the respiratory team to allow training of nursing staff to enable early implementation of NIV for appropriate patients.

Laryngeal mask airways and combitubes in resuscitation

Since 1996, the European Resuscitation Council has advocated Laryngeal mask airways and combitubes in resuscitation for presentation to emergency departments, it is disappointing that this detailed document completely fails to mention the role of the emergency physician in initiating NIV. Indeed, the document has a long list of healthcare professionals who have been demonstrated to be efficient in the implementation of NIV from respiratory and intensive care physicians to lung function technicians and physiotherapists, but emergency physicians or nurses are not mentioned at any point. Presumably, this reflects a relative lack of input from emergency physicians, who need to become familiar with these recommendations and implement local guidelines in conjunction with the respiratory team to allow training of nursing staff to enable early implementation of NIV for appropriate patients.

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Laryngeal mask airways and combitubes in resuscitation

Since 1996, the European Resuscitation Council has advocated the use of combitubes and/or laryngeal mask airways (LMAs) for airway management in cardiac arrest. However, a postal survey to 265 resuscitation departments in the UK indicates that their use has not yet become universal. The results need to be interpreted with a certain amount of caution, given that the survey only achieved a response rate of 58%. However, only 25% of hospitals replied that LMAs were in current use for airway management in cardiac arrest, with a further 27% claiming plans to introduce them to the resuscitation room. Only 5% of departments reported using combitubes in this role. The main area of use of LMAs outside theatres was in those hospitals that do not have on site anaesthetists as part of the resuscitation team. Reasons given for not introducing the use of LMAs included perceived training costs and difficulties with skill maintenance. The survey notes that those departments using and auditing LMAs regularly in resuscitation have reported no difficulties with their use or training.

Motorcycle helmets do save lives! The compulsory use of motorcycle helmets has been law for so long in many countries that it has been taken for granted. However, this is not true internationally: in Florida, a previously mandatory motorcycle helmet law has recently been repealed. This has provided physicians with an ideal opportunity to reassess the contribution of helmets to motorcycle safety. Deaths and morbidity of all motorcycle related trauma patients at two trauma centres were compared retrospectively for two six-month periods, before and after the law was repealed. The authors found that helmet use fell from 83% to 56% with a corresponding rise in the numbers of serious brain injuries. There was a doubling in the number of fatalities, although overall numbers remained low. So, in case there was any doubt, the use of motorcycle helmets does save lives and decreases morbidity.

Lack of benefit of nebulised adrenaline in bronchiolitis Bronchiolitis is a common cause of paediatric presentation to emergency departments, especially in the winter months. Treatment is usually supportive, with the role of specific therapeutic agents being frequently debated, particularly the use of nebulised adrenaline. In this study, children less than 1 year in age presenting with a clinical diagnosis of bronchiolitis were first stabilised with oxygen to maintain saturations over 90%, given antipyretics for temperatures more than 38°C and/or received suction as being attributable to the impaired drug delivery to the site of action as the treatment of choice, are all patients obtaining benefit from fibrinolytic therapy? Two studies have recently been published reporting the use of ondansetron to prevent vomiting in children caused by acute gastroenteritis. Treatment is usually supportive, with the role of specific therapeutic agents being frequently debated, particularly the use of nebulised adrenaline. In this study, children less than 1 year in age presenting with a clinical diagnosis of bronchiolitis were first stabilised with oxygen to maintain saturations over 90%, given antipyretics for temperatures more than 38°C and/or received suction as being attributable to the impaired drug delivery to the site of action

Ondansetron for vomiting children with gastroenteritis Two studies have recently been published reporting the use of ondansetron to prevent vomiting in children caused by acute gastroenteritis. Both studies were prospective, randomised, double blinded and funded by the same pharmaceutical company, but were otherwise different in design and intervention. The first study enrolled 107 children from age 1 month to 22 years, but overall the authors conclude that the CDSR is a valuable resource for the emergency physician.

Thrombolysis for acute myocardial infarction in the elderly population Fibrinolytic treatment is so well established as the treatment for acute myocardial infarction (AMI) in most hospitals in the UK, that it forms part of the NHS Plan and National Service Framework for Coronary Heart Disease. Having acknowledged it as the treatment of choice, are all patients obtaining benefit from fibrinolytic therapy? Two studies have recently been published reporting the use of ondansetron to prevent vomiting in children caused by acute gastroenteritis. Both studies were prospective, randomised, double blinded and funded by the same pharmaceutical company, but were otherwise different in design and intervention. The first study enrolled 107 children from age 1 month to 22 years, but overall the authors conclude that the CDSR is a valuable resource for the emergency physician.

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