

and the general practitioner (I'm sure that many readers will believe this is the most important message of all to portray). In each episode there may actually be several messages, each targeting a different type of viewer.

Conclusion

The programme is not perfect as there are limitations which define how it is made. It

is popular for many reasons. It is part soap opera, part education, and it appeals to the public fascination with all things medical. It portrays life in an "average" A&E department, warts and all. I have been fortunate to be involved with it and in Clive Mantle (who plays the consultant Mike Barret) I have found one of the few people I can beat at golf.

LETTERS TO THE EDITOR

Fluid resuscitation in traumatic haemorrhage

EDITOR,—The article "Fluid resuscitation in traumatic haemorrhage" by R Cutress¹ contains a significant error (or perhaps a misprint). The author states "...ATLS as a package has been shown to be more effective in prehospital treatment than Basic Life Support", citing references 22 and 23. Neither of the articles referenced looked at ATLS. They compared ALS (Advanced Life Support) for ambulancemen (the equivalent of extended training) to basic ambulance training and found it produced better results. However, this conclusion must be regarded with caution as the methodology in both studies was weak.

The author states that "ATLS has been shown to make a substantial contribution to the management of trauma". As an ATLS enthusiast I agree with the spirit of this statement. However, I am unaware of any trial showing that ATLS has a significant impact on morbidity or mortality. Perhaps it is not necessary to prove that it does. But then, as the author has demonstrated, when you examine the conventional wisdom, as he does with intravenous fluid, the results can be surprising.

BRIAN MCNICHOLL
A&E Department, Royal Victoria Hospital
Grosvenor Road, Belfast

1 Cutress R. Fluid resuscitation in traumatic haemorrhage. *J Accid Emerg Med* 1995; 12:165.

The author replies

I would like to thank Brian McNicholl for pointing out an error in my article "Fluid resuscitation in traumatic haemorrhage". As he correctly states the sentence should read "There has been no evidence to date suggesting that prehospital administration of intravenous fluids is of benefit to trauma patients (reference 21), although ALS (Advanced Life Support) as a package has been shown to be more effective in pre-hospital treatment than Basic Life Support (references 22, 23)."

The effect of ATLS has been studied by comparing patient outcome before and after the introduction of ATLS. In this way ATLS has been shown to improve patient outcome.¹ Such studies however, do not always show significant improvement.² I am sure that there would be inherent difficulties in the design and methodology of an "ideal" trial

that directly compared ATLS with some other control. It is for this reason that I suggested in the article, that components of ATLS, for example the fluid resuscitation regime, be individually taken and put to test.

RAMSEY CUTRESS
1 Mill Close, Hemingford Grey,
Cambridgeshire

- 1 Ali J, Adam R, Butler AK, Chang H, Howard M, Gonsalves D, *et al*. Trauma outcome improves following the Advanced Trauma Life Support program in a developing country. *J Trauma* 1993;34:890-8.
- 2 Vestrup JA, Stormorken A, Wood V. Impact of Advanced Trauma Life Support training on early trauma management. *Am J Surg* 1988;155:704-7.

Management of poisoning

EDITOR,—The recent paper from Greaves *et al*¹ suggests the management of poisoning is likely to be variable and that the existing literature is interpreted in different ways by different people. The staff in Glasgow deserve credit for diagnosing acute carbon monoxide poisoning and for the satisfactory outcome of the patients they report.² Despite the certainty with which they recommend hyperbaric oxygen (HBO) for acute carbon monoxide poisoning, the data they cite are limited.³ Some clinicians hold a contrary view. Authors of a review of controlled trials comparing normobaric and hyperbaric oxygen concluded that further trials were needed to establish the role of HBO.⁴ Until these have been carried out, the risks of transferring critically ill patients must be balanced against possible benefits of HBO.

Further studies are needed in other areas of poisoning but, to avoid unnecessary duplication of previous work, systematic review of current evidence is needed. A group is currently trying to establish (with the support of the UK and Australasian Cochrane Centres) a Cochrane Collaborative Review Group on poisoning and envenomation. Anyone wishing to contribute to this can contact the following: R D Hardern, Accident and Emergency, St James's University Hospital, Beckett Street, Leeds LS9 7TF, United Kingdom, or Dr N Buckley, Discipline of Clinical Pharmacology, Mater Misericordiae Hospital, Watarah, NSW 2298, Australia.

RICHARD HARDERN
Accident and Emergency,
St James's University Hospital, Leeds

- 1 Greaves I, Goodacre S, Grout P. Management of drug overdose in accident and emergency departments in the United Kingdom. *J Accid Emerg Med* 1996;13:46-8.
- 2 Roy B, Crawford R. Pitfalls in diagnosis and management of carbon monoxide poisoning. *J Accid Emerg Med* 1996;13:62-3.
- 3 Smith JS, Brandon S. Morbidity from acute carbon monoxide poisoning at 3 year follow up. *BMJ* 1973;i:318-21.
- 4 Tibbles PM, Perrotta PL. Treatment of carbon monoxide poisoning: a critical review of human outcome studies comparing normobaric oxygen with hyperbaric oxygen. *Ann Emerg Med* 1994;24:269-76.

Paracetamol overdose

EDITOR,—The treatment of paracetamol overdose has been and remains a contentious issue among both toxicologists and A&E doctors. The opinions expressed in the recent review of the management of drug overdoses in A&E departments in the United Kingdom,¹ however, were misleading and failed to indicate the currently accepted guidelines for the management of acute paracetamol overdosage.² In both scenario 1 and 2 it was implied that gastric lavage was an inappropriate measure, but from the history in both cases gastric lavage with charcoal was the treatment of choice. I find the assertion regarding the patient in scenario 1 particularly alarming as the only early diagnostic aid in cases of paracetamol overdose is the history taken from the patient. It should be of little relevance how frequently the patient attends or how many previous overdoses the patient has taken; patients should be treated according to accepted guidelines until proof exists that the history is inaccurate. Gastric lavage is rapidly losing favour in the treatment of paracetamol overdose but gastric lavage alone has been shown to lower plasma paracetamol levels by up to 39.3%³ and in combination with charcoal is still regarded as the optimum treatment of paracetamol overdose within two hours of ingestion.

J WHITTAKER
Accident and Emergency Department,
Royal Preston Hospital, Preston

- 1 Greaves I, Goodacre S, Grout P. Management of drug overdoses in accident and emergency departments in the United Kingdom. *J Accid Emerg Med* 1996;13:46-8.
- 2 Management of acute paracetamol overdosage. Guidelines from the Paracetamol Information

Centre in collaboration with the British Association for Accident and Emergency Medicine, June 1995.

- 3 Underhill TJ, Greene MK, Dove AF. A comparison of the efficacy of gastric lavage, ipecacuanha and activated charcoal in the emergency management of paracetamol overdose. *Arch Emerg Med* 1990;7:148-54.

The authors reply

We are grateful for the opportunity to respond to these comments regarding our paper.

With regard to the suggestion that we implied gastric lavage to be an inappropriate measure in scenarios 1 and 2, we must stress that the intention of our paper was to provoke debate (successfully it would appear) rather than to suggest management guidelines.

The paper by Underhill *et al* (reference 3 above) showed paracetamol levels falling by a mean of 39.3% over the two hours following lavage. This does not demonstrate causality, particularly in the absence of an adequate control group. The paper also demonstrated a mean fall in serum paracetamol levels of 40.7% following administration of ipecacuana and of 52.5% over the same two hour period following administration of activated charcoal. The difference between results for lavage and ipecacuana was not significant. The fall in paracetamol levels following charcoal was significantly greater than both other forms of treatment. The paper concludes that "activated charcoal was more effective at limiting absorption of paracetamol following overdose than either gastric lavage or ipecacuana induced emesis". The authors also comment that gastric lavage is not a risk-free procedure.

The new guidelines for the management of paracetamol poisoning recommend lavage or charcoal rather than lavage with charcoal as the optimal treatment within two hours of ingestion (reference 2 above).

I GREAVES
S GOODACRE
P GROUT

Accident and Emergency Department,
St James's University Hospital,
Beckett St, Leeds, LS9 7TF

Support surfaces

EDITOR,—I was concerned to read the paper by P W Main and M E Lovell entitled "A review of seven support surfaces with emphasis on their protection of the spinally injured".¹

I would not in any way doubt their findings on the pressure problems related to the use of long spinal boards. Unfortunately, however, they seem to have missed the whole point of the use of spine boards in the prehospital care of critically injured patients. Although the spine board may provide a surface for in-line immobilisation of the spine, its primary function is in the road traffic accident setting, where it is used to extricate patients from vehicles and for their subsequent transportation to hospital.

The spine board is the only tool that can be used to slide a patient with a serious injury from a vehicle with safe in-line minimal immobilisation of the spine and retain that immobilisation on route to hospital. With the use of a board for both rearward and side

extrication from a vehicle, the patient can be extricated with support to the whole spine safely from virtually any vehicle accident. The board's construction, specifically designed with a slippery surface to slide patients from the wreck, has a major advantage in prehospital care as an extrication device. This is not possible with a vacuum mattress or scoop types of stretcher or, in fact, any other type of stretcher available.

The patient on extrication is immediately immobilised with head and neck restraint and four body straps and transferred to an ambulance trolley. The patient is then transported on the board during the short transfer to hospital, where, again, the advantage of being on a board is obvious. In the case of a multiple injury patient, rapid transfer from an ambulance to hospital trolley is essential and this is facilitated by rapid transfer on the spine board, again with a patient fully immobilised. The hospital staff, once appraised of the mechanism of injury and apparent injuries to the patient, can decide whether to maintain the patient on the board or transfer them with an appropriate spinal lift to a vacuum mattress.

If a vacuum mattress were available on all front line ambulances, a single ambulance crew would not be able to transfer a patient, once extricated from a wreckage, from a spine board to a vacuum mattress. The vacuum mattress, therefore, although an ideal A&E department and secondary transfer tool, has a number of practical limitations in its prehospital use as a primary stretcher. The spine board certainly does have its limitations, with pressure area problems if patients are left on the board for long periods of time, but its value as an extrication device, enabling extrication with in-line spinal immobilisation for transfer to hospital, cannot be overemphasised.

This paper clearly emphasises the potential hazards of a spine board to a patient, with defined spinal column injury, but one must remember that the majority of patients are placed on a board with only suspected injury, because of their injury pattern or injury mechanism that puts the spine at risk. The safe extrication of a patient from the wreckage is almost certainly of more importance to the integrity of a damaged spinal column than a smaller risk of pressure area problems in the short transfer time to hospital.

C J CARNEY
Director of Operations
Staffordshire Ambulance Service NHS Trust

- 1 Main PW, Lovell ME. A review of seven support surfaces with emphasis on their protection of the spinally injured. *J Accid Emerg Med* 1996;13:34-7.

The authors reply

Thank you for the opportunity to answer Dr Carney's points. We would value any debate of this most important subject.

We disagree that the long spinal board's main and most used function is in the extrication setting, involving motor vehicle trauma. The spinal board will be used for any patient when spinal injury is suspected, including motorcycle accidents, falls from heights, pedestrian RTAs, diving accidents, etc. We wonder what percentage of calls that an ambulance crew attends and where a spinal board is used are for extrication. We suspect that it is few. It would be helpful if such information were collected, since no direct figures are available. We are grateful to Mr DA Boot (Mersey Trauma Outcome

Study) for providing information from the study. This database, compiled from clinical notes, reveals that of the 658 patients with a trauma score greater than 15, only 51 patients were recorded as trapped and requiring extrication (personal communication).

If thought necessary, a single ambulance crew could transfer a patient from a spinal board simply by use of a scoop stretcher placed between the patient and the board and then lowered onto a vacuum mattress. This, however, would be time consuming and probably not warranted; it would add time to the evacuation of the casualty.

As covered in our paper, the spinal board is not an ideal surface. The spine is not flat! The neck is extended on the board¹; it causes patients without spinal injury pain and discomfort; it causes pressure sores in those patients with (often irreversible) spinal injury, who may stay on the board until they arrive at a spinal centre. Patients are left on the board longer than necessary due to caution about causing or extending an injury. This is usually until a radiological series is performed. These x rays may also be needed because of pain caused by lying on a board, which cannot be differentiated from significant trauma.² We do not think that in most settings rapid removal from the board takes place, and many casualty departments own boards to continue this type of spinal immobilisation.

Although we do not expect change in practice from our paper we wish to highlight the above points and agree with Dr Carney's suggestion that spinal boards should only be used for the short periods of transfer to hospital from the scene of the accident.

P W MAIN
M E LOVELL
208 (Merseyside) Field Hospital, RAMC(V)
Chavasse House, Sarum Road,
Liverpool, L25 2XP

- 1 Schringer DL, Larmon B, LeGassick T, Blinman T. Spinal immobilisation on a flat board: does it result in a neutral position of the cervical spine. *Ann Emerg Med* 1991; 20:878-81.
- 2 Chan D, Goldberg R, Tascone A, Harmon S, Chan L. The effect of spinal immobilisation on healthy volunteers. *Ann Emerg Med* 1994;23:48-51.

Fast tracking patients with a proximal femoral fracture

EDITOR,—Ryan *et al* are right to highlight the need for improvement in the management of patients with proximal femoral fractures in accident and emergency departments in the United Kingdom¹ but even with the fast tracking system in place, over 75% of their patients waited two hours or more in the A&E department before transfer. Consequently, we feel that the system does not fully address the real priorities for treatment of such patients. We define these priorities as (a) the urgent provision of effective analgesia and splintage, (b) prompt imaging and other investigations to allow for a plan of action, (c) the primary prevention of common complications such as pressure sores, and (d) clear and frequent communication with the patient (and carers) about the likely timescale of transfer to a ward, surgery and postoper-