Leeds Major Trauma Centre

West Yorkshire Major Trauma Network
Quality Improvement update

Selected clinical learning points from the last year (April 2012 - April 2013)

1. Tranexamic acid

CRASH 2 provided good evidence that Tranexamic acid (both an initial bolus and then an 8 hour infusion) is a safe and effective intervention for patients thought to have significant bleeding following major trauma. The RCPCH has recently recommended its use in children too. It is currently underused in our region.

Learning points: A redesigned trauma chart is in use at the LGI and includes Tranexamic acid on the prescription chart component. This chart can be modified for use in trauma units. A guideline on Tranexamic acid use is currently going through the final stage of approval by Leeds Health Pathways and will be circulated to the network soon.

2. Referral - a dynamic process

A 63 year old male was brought to a trauma unit Emergency Department following a fall from a ladder roughly 30 feet from the ground. He sustained a number of complex limb fractures, fractured ribs with pulmonary contusions and significant pelvic injuries. He was referred to the MTC for management of his pelvic injury but no suitable bed was available for 36 hours. During this time he became increasingly unwell with ongoing transfusion needs and increasing inotropic support. Unfortunately, despite definitive care being provided he went on to develop multi-organ failure and died. At mortality review it was felt that the delay in definitive care may have contributed to his poor outcome.

Learning points: cases like this should in future come directly to the MTC, but there will be some who require transfer. It is important to ensure that full information about the patient's current state is relayed as part of the referral but **equally** important to ensure that the receiving team are alerted to any change in condition particularly if this increases the urgency of the referral.

3. Trauma and anti-coagulants - reversal of Warfarin

A patient at the MTC was admitted to a non-trauma ward with a seemingly minor pelvic injury. He was on Warfarin (for paroxysmal AF) and an initial high INR was not acted upon. Over the next few days the patient became increasingly unwell and required significant transfusion. Despite vitamin K the INR worsened before full reversal. At a recent national event several regions reported similar issues with under-recognition of the risks of anti-coagulation in trauma patients - usually frail and elderly ones.

Author: Dr Jonathan Jones, Consultant in Emergency Medicine, Clinical Governance lead for Leeds MTC
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Learning points: The proportion of the population on anti-coagulation is steadily increasing. They are vulnerable to significant bleeding with seemingly minor trauma. Be aware of local protocols for reversal. The LTHT protocol is being reviewed to ensure that the significance of trauma is appropriately highlighted.

4. Chest injuries - get worse before they get better

A 76 year old woman with COPD tripped and fell. She landed with her chest on the kerb and sustained a number of rib fractures, a small pneumothorax and pulmonary contusions. Despite appropriate treatment and analgesia she deteriorated on the ward and was transferred to level 2 (high dependency) care. Unfortunately she developed worsening respiratory failure and died.

Learning points: Rib fractures represent potentially significant injuries, particularly in those with co-morbidity (especially lung disease). Be aware that most rib fractures will become more painful over the first few days and most contusions will get worse before they get better. Have a low threshold for caring for these patients in an area allowing close observation and appropriate nursing care. Good analgesia is vital - there may be a role for intercostal blocks and similar specialist interventions, so liaise with your acute pain team.

5. Paediatric abdominal trauma - beware of seemingly 'minor' injuries

An 8 year old girl fell off her scooter. The handlebar hit her in the upper abdomen. She was admitted to the paediatric ward of a trauma unit but became increasingly unwell over the next 36 hours. CT showed injuries to the duodenum and pancreas. She was transferred to the MTC and, following surgery, went on to make a full recovery.

Learning point: Seemingly minor mechanism can lead to significant injury. In this case although the forces involved were small, they were all transmitted through the point of the handlebar to a vulnerable anatomical area where compression of organs against the spine can lead to significant injuries.

6. Traumatic cardiac arrest

A 32 year old man crashed his car at high speed. Although he had few signs of external injury he lost his output on the way to the MTC and had had no signs of circulation for approximately 20 minute prior to his arrival. Attempts at resuscitation were made, including the use of significant amounts of blood products. These attempts were futile and he was confirmed dead. Post-mortem showed a high cervical fracture with cord transection.

Learning point: out of hospital arrest following blunt trauma has a very poor prognosis. An evidence based guideline for the management of traumatic cardiac arrest is being developed at LTHT.

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The activated network - the first few weeks

The West Yorkshire Major Trauma Network has been active since the 2nd April 2013. As yet there is little to suggest that trauma bypass to the MTC is occurring reliably. The situation is under continuous review and there are regular discussions with the ambulance service. Please direct any clinical concerns (including patients you believe were not appropriately triaged) to jonathan.jones@leedsth.nhs.uk

Web resource

A Major Trauma Network web resource should be available via Leeds Health Pathways in the next month. Please send any requests for specific information that you would like to see available on this site to jonathan.jones@leedsth.nhs.uk

Feedback

Please direct any clinical issues related to the major trauma network to jonathan.jones@leedsth.nhs.uk ,consultant in emergency medicine and LTHT major trauma clinical governance lead (but don't forget to complete local incident reporting procedures.

Process issues should be directed to chris.jones@leedsth.nhs.uk (the LTHT trauma service manager).

Best wishes

Jonathan Jones
LTHT Major Trauma Quality Improvement lead

Please note - the cases above are fictionalised to ensure anonymity but are all based on real events.