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Major Trauma': Now Two Separate Diseases?

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Across the developed world demographic change is having a profound impact on Emergency Care¹ with a recognition that older people have different needs, and may need different services². The article by Hawley et al³ in this edition and the recent publication of a report⁴ on major trauma in older people from the Trauma Audit and Research Network (TARN) suggest that we may also need to think differently about our major trauma systems. In England and Wales recent improvements in data collection from Trauma Units (hospitals that are not Major Trauma Centres) means that in 2016 the 'typical' case of major trauma is no longer a young male admitted after a road traffic accident, but is an older male admitted after a fall of less than 2 meters.

These older trauma patients have a similar distribution of injury severity score and injury type (predominantly traumatic brain injury) to younger trauma patients, but have a much lower level of pre-hospital recognition and so are usually managed in Trauma Units. Late recognition gives rise to poorer performance on all of the trauma care quality indicators. These patients are much less likely to be transferred to Major Trauma Centres.

Pre-hospital systems are geared to recognise major trauma following high energy transfer (such as road traffic collision or fall from a height). This report has emphasised that in older people a low energy transfer mechanism of injury can also result in major trauma. Low energy transfer injury (a fall) is so common in this age group that major trauma becomes a 'needle in a haystack', as there are no immediately obvious factors that can be used to activate the major trauma system.

These newly recognised characteristics of trauma in older people have implications for the future organisation of trauma care, and trauma research. In particular the role of the Trauma Unit in trauma networks needs to be re-evaluated. Older patients will continue to be recognised late, and will be nearly all initially treated in local hospitals – so these units will need to be staffed by trauma care experts with a particular interest in the care of older people to rapidly evaluate the patient, whether in the ED or on a medical ward, and in conjunction with trauma care specialists in the Major Trauma Centre to decide on the level of intervention that is appropriate for each individual. The

regionalisation of trauma care that has improved outcomes for high-energy transfer trauma⁵ may not be the most appropriate system for low energy transfer major injury.

The TARN report shows that there are differences in the processes of trauma care in older patients. It may be that best care is different for older people, however it may also be that either conscious or unconscious ageism is also playing a role. It this discussion frailty (which is currently not routinely measured) may be more important than age. Determining the optimal process of care and defining the parameters on which treatment decisions should be made will be key research areas for the future. Implementation of change in the UK might be driven by the NICE Service Delivery Guideline, which highlighted the importance of using payment structures to incentivise better care and comprehensive data collection⁶.

The discovery of so many older patients with major injury who were previously hidden from the trauma statistics presents a challenge to the conventional view of the best way to structure health services for the severely injured. In future we may need to think of Major Trauma as two distinct diseases, with “High energy transfer major trauma” and “Low energy transfer major trauma” requiring different clinical skills and different healthcare processes.

References

1. Brownell J, Wang J, Smith A, et al. Trends in emergency department visits for ambulatory care sensitive conditions by elderly nursing home residents, 2001 to 2010. *JAMA Internal Medicine* 2014;174(1):156-58. doi: 10.1001/jamainternmed.2013.11821
2. Carpenter CR, Heard K, Wilber S, et al. Research Priorities for High Quality Geriatric Emergency Care: Medication Management, Screening and Prevention and Functional Assessment. *Academic emergency medicine : official journal of the Society for Academic Emergency Medicine* 2011;18(6):644-54. doi: 10.1111/j.1553-2712.2011.01092.x
3. Hawley C, Sakr M, Scapinello S, et al. Traumatic brain injuries in older adults—6 years of data for one UK trauma centre: retrospective analysis of prospectively collected data. *Emergency Medicine Journal* 2017;X(XX):XXX-XXX.

4. Trauma Audit and Research Network. Major Trauma in Older People. www.tarn.ac.uk (Accessed XX Feb 2017), 2017.
5. National Peer Review Program. National Peer Review Trauma National Report. [http://www.tquins.nhs.uk/download.php?d=tquins/resources/reports/Trauma national report 2015 final.pdf](http://www.tquins.nhs.uk/download.php?d=tquins/resources/reports/Trauma%20national%20report%202015%20final.pdf) (Accessed 2nd Feb 2017): NHS England, Sept 2015.
6. National Institute for Health and Care Excellence. NICE Guideline NG40. Major trauma: service delivery. <https://www.nice.org.uk/guidance/ng40/evidence/full-guideline-2313258877> (Accessed 2nd Feb 2017), 2016:P121.