Urgent action needed on prehospital tranexamic acid in trauma

Ian Roberts

Urgent action is needed on the prehospital administration of tranexamic acid for trauma victims. This is the only conclusion that can be reached after reading the shocking results from Girardello *et al*.[1] It is unacceptable to withhold a lifesaving treatment. It is unacceptable to treat someone differently based on their sex or age when their potential to benefit from the treatment is the same regardless.

The Swiss healthcare system is one of the best in the world. Nevertheless, according to the results of the observational study by Girardello and colleagues, the proportion of injured patients receiving tranexamic acid in the prehospital setting of the State of Vaud in Switzerland is bewilderingly low, with even lower rates for women and older patients. Only 11% of trauma victims who were at risk of death from bleeding received the only proven lifesaving treatment in the prehospital setting. Given that results from the USA and the UK show similarly alarming levels of underuse, we cannot dispute the authors' conclusion that the prehospital implementation of tranexamic acid in trauma is suboptimal worldwide.[2 3]

What needs to be done? Paramedics worldwide must be trained to give trauma patients with ongoing significant haemorrhage or at risk of significant haemorrhage a 1 g dose of tranexamic acid by intramuscular (two 5 mL injections of 100 mg/mL) or slow intravenous injection as soon as possible after injury but no later than about 3 hours. They must be reminded of the evidence that women and older adults are less likely to be treated despite a similar risk of death. Children aged 12 years and under should receive an age-adjusted dose, although a fixed dose of 0.5 g would be suitable in mass casualty events.[4] Intramuscular tranexamic acid is well tolerated and rapidly absorbed and pharmacological research shows that therapeutic levels are achieved within the time it would take to insert a cannula and inject intravenously.[5 6] Undue emphasis on the theoretical risks of prolonged tranexamic acid use for conditions like heavy menstrual bleeding is inappropriate and will only cause confusion and treatment delay. Information about whether tranexamic acid treatment has been given at the scene should be given to the receiving hospital.

How can paramedics objectively assess the risk of significant bleeding and avoid any discrimination? As suggested by Girardello *et al*, the use of objective treatment criteria such as the BATT (Bleeding Audit Triage Trauma) score will help to ensure clear treatment guidelines based on expected patient benefit. The BATT score was designed explicitly for this purpose.[7] The use of tranexamic acid in trauma should be regularly audited and prehospital care providers should be encouraged and rewarded for proper use but not censured for minor errors. All directors of prehospital care should review their trauma treatment guidelines and simplify them whenever possible.

In low-income and middle-income settings where there is only rudimentary prehospital care, intramuscular tranexamic acid could be given by trained first responders, police officers, ambulance drivers and primary care nurses, vastly expanding timely access to treatment for trauma victims. Timely treatment would be also facilitated by the development of low-cost, easy-to-use autoinjectors or pre-filled syringes. But this will not happen without the political will. To date, the WHO, which included tranexamic acid for trauma on the list of essential medicines in 2012 has been slow to promote its global use. Tranexamic acid is inexpensive, heat stable and has a long shelf life. Its use in trauma is highly cost-effective regardless of country income. But tranexamic acid is a cheap generic drug. Drug companies spend vast sums marketing licensed products but there is no financial incentive to promote generics like tranexamic acid. The WHO, national governments and global healthcare advocates must step in and act to correct this market failure.

We must involve patients. They are the only victims of this neglect. In the UK, it took a mass casualty event (the Manchester Arena Bombing) with 22 dead and over a thousand injured, and then a statutory public inquiry, before National Health Service leaders were tasked to increase prehospital use of intramuscular tranexamic acid in trauma victims.[8] I urge Girardello and colleagues to work with trauma victims in Switzerland and use the important information they have presented here to effect change across the country. If society has given you the privilege of a good education and the time to read this article, you too have a responsibility. We are all responsible. This situation is unacceptable.

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