

## OBSERVATIONS

## IMPROVING TRAUMA CARE WORLDWIDE

## Tranexamic acid in trauma: we need stronger global health policy

Tranexamic acid substantially reduces death in bleeding trauma patients. So why are the World Health Organization, the United Nations, the World Bank, and Unicef not ensuring global implementation, ask **Ian Roberts and colleagues**

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You might expect that the identification of a highly cost effective treatment for a disease that kills more people each year than HIV/AIDS, malaria, and tuberculosis combined would stimulate an immediate global health policy response, with strong efforts to make the treatment freely available to all those who need it.<sup>1</sup> Knowing that the United Nations General Assembly had proclaimed 2011-20 to be a “decade of action” for tackling this particular health scourge, you might feel sure that concerted action was being taken.<sup>2</sup> You would be wrong. The “disease” is trauma, and the treatment is a short infusion of a generic drug called tranexamic acid, but there has been no global health policy response.<sup>3-6</sup>

In 2010 a collaboration of doctors and nurses from 40 countries reported that tranexamic acid safely reduces mortality in bleeding trauma patients. Given within three hours of injury, it reduced the risk of bleeding to death by one third, with no discernible side effects.<sup>4</sup> Economic analysis shows that tranexamic acid in trauma is among the most cost effective ways available to save a life—more cost effective than antiretroviral treatment for HIV and nearly as cost effective as bed nets for malaria prevention.<sup>5</sup> If all patients admitted to hospital with traumatic bleeding worldwide received tranexamic acid within three hours, there would be at least 100 000 fewer trauma deaths a year.<sup>7</sup>

Within weeks of publication of these findings, the British army was using tranexamic acid on the battlefield, and two years later it has been widely implemented throughout the NHS, having been included in the guidelines of the Joint Royal Colleges Ambulance Liaison Committee for prehospital practice and in the Department of Health's best practice for trauma.<sup>8</sup> The trial investigators successfully applied to get tranexamic acid included in the World Health Organization's list of essential medicines, but implementation efforts by organisations from which we would expect health policy leadership—WHO, the UN, World Bank, and Unicef—have been limp or absent.

It seems that some deaths are more important than others. In 2011 more than eight million people with HIV infection in low and middle income countries received antiretroviral treatment.<sup>9</sup> This is appropriately considered one of the most important global health achievements of the past decade and is all the more remarkable because diagnosis of HIV infection requires a laboratory test and the patient must be treated for life. But if such patients arrive at the emergency department with major trauma (and about a quarter of trauma patients in sub-Saharan Africa are HIV positive) they might die for want of a short infusion of a drug that costs a fraction of the cost of a unit of blood.<sup>10</sup>

Wider use of tranexamic acid in surgery would save blood. A systematic review of randomised trials showed that tranexamic

acid reduced the number of patients receiving a blood transfusion by a third.<sup>11</sup> Reducing use of blood in surgery would make more available for situations where transfusion might be life saving, such as in children with malaria or mothers with postpartum bleeding.

And tranexamic acid is safer than blood. The risks of becoming infected with HIV, hepatitis B virus, or hepatitis C from a blood transfusion in sub-Saharan Africa are estimated at 1, 4.3, and 2.5 infections per 1000 units, respectively.<sup>12</sup> If annual transfusion requirements projected by WHO were met, blood transfusions alone would be responsible for 28 595 hepatitis B infections, 16 625 hepatitis C infections, and 6650 HIV infections every year. Because it reduces the need for transfusion, tranexamic acid is a cost effective way to reduce viral infections transmitted by transfusion.<sup>13</sup>

Recognising these opportunities requires a new mode of thinking. It requires a move away from disease based leadership, where tribal leaders bang the drum of disease burden in search of the funds to prevent the specific illness that interests them most, towards people centred care, aimed at achieving the best health given the available resources.

The CRASH-2 trial was funded by UK taxpayers, and UK taxpayers have been the first to benefit. However, the trial was possible only because hundreds of doctors and nurses in 40 countries worked together in the interests of patients everywhere to recruit the 20 211 patients, 3076 of whom died. The trial turned private tragedy into a public good, and this must now be used to inform global policy.

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