CRASH-2

- Crash-2: Large international randomized placebo controlled trial
  - TXA given to “adult trauma patients with, or at risk of, significant bleeding who were within 8 hours of injury”
  - Only 37% of patients in trial received TXA within an hour of injury
  - 20k patients
  - All-cause mortality decrease from 16% (non-TXA) to 14.5% (TXA), p<0.05
  - DVT similar between both groups, non-TXA and TXA
CRASH-2

• “Early administration of TXA safely reduced the risk of death in bleeding trauma patients and is highly cost-effective. Treatment beyond 3 hours of injury is unlikely to be effective. Future work [the Clinical Randomisation of an Antifibrinolytic in Significant Head injury-3 (CRASH-3) trial] will evaluate the effectiveness and safety of TXA in the treatments of isolated traumatic brain injury.”
CRASH-2

- Weaknesses
  - Given to patients “suspected” of hemorrhage
  - Timing of administration so varied, hard to adapt to our practice based on these results
  - Did not include USA
  - Only 1/2 went to the OR
  - Basically a wash
MATTERs and MATTERs II

• MATTERs: military study
  • GSW or explosion battlefield trauma
  • TXA given within 1 hour of injury
  • All comers: More pRBC in TXA vs non-TXA group
  • Massive Transfused (10+ units): Similar transfusion requirements

• 39% reduction in mortality in massively transfused patients
  • Greatest benefit mostly in massively transfused patients
  • Given with Cryo, area of greatest reduction in mortality
MATTERs and MATTERs II

• Weakness:
  • Hard enough to get pRBC or blood pre-hospital, Cryo?!
  • Distinct patient population, healthy young, penetrating trauma
  • Follow up is difficult
    • Perhaps complications occurred but difficult to find documentation
Military use of tranexamic acid in combat trauma: Does it matter?

Howard JT¹, Stockinger ZT, Cap AP, Bailey JA, Gross KR.

- Mortality was not different
- Massive Transfused patients show no difference in rRBC units given
Military use of tranexamic acid in combat trauma: Does it matter?

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Figure 3. TXA mortality risk ratio estimates for total sample and each subsample compared with results from CRASH-2, MATTERS I, and II.
Military use of tranexamic acid in combat trauma: Does it matter?

Howard JT\textsuperscript{1}, Stockinger ZT, Cap AP, Bailey JA, Gross KR.

<table>
<thead>
<tr>
<th>Variables</th>
<th>PE HR (95% CI)</th>
<th>P</th>
<th>DVT HR (95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample, N = 3,766*</td>
<td>2.82 (2.08–3.81)</td>
<td>&lt;0.001</td>
<td>2.00 (1.21–3.30)</td>
<td>0.02</td>
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<td>TXA vs. no-TXA</td>
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<tr>
<td>MT sample, n = 783**</td>
<td>3.64 (1.96–6.78)</td>
<td>0.003</td>
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<td>TXA vs. no-TXA</td>
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</tbody>
</table>
Timing of TXA administration is important

Survey:
- 93% military doctors knew dose
- 34% civilian

Optimal delivery time:
- 91% military doctors
- 24% civilian

Caution! Education is important
Prehospital TXA

• Best Benefit (if any, in the right patient population): <1hr after injury

• Some benefit: <3hr after injury

• Possible harm: >3hr after injury
Thanks!