The Impact of Resuscitative Trauma Research on Clinical Guideline Development

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“Regardless of the reasons cited for this phenomenon — structural, economic, or motivational — the result is the same: we are not reaping the full public health benefits of our investment in research.”

Background
Traumatic injury is the leading cause of death in individuals <45 years and costs society $143 billion a year. Clinical research in this population is challenging and has resulted in limited treatment advances. Randomized control trials (RCTs) are the gold standard for evaluating practice change, however, the heterogeneity of trauma resuscitation results limited impact on clinical care guidelines (CCGs).

Purpose
This critical analysis reviews RCTs that have been conducted in resuscitative medicine to determine if they have contributed to CCGs. Secondary objectives were to evaluate CCGs to determine if RCTs form the foundation for evidence-based medicine in trauma and determine the aspects of RCTs design, conduction and collaboration that increase the impact on guideline updates.

Methods
ClinicalTrials.gov was queried to identify RCTs. Trials were reviewed for inclusion based on primary outcome, and type and timing of intervention. Trials were scored based on degree of incorporation into CCGs. CCGs from ACS and EAST were used to determine the overall impact each trial had on advancing resuscitation guidelines. Guidelines were independently assessed to determine the basis of evidence for treatment, for example where they based on clinical trial or observational or retrospective research.

Results
Primary & Mortality Outcomes
20% reached significance
67% evaluated mortality as outcome
12.5% significantly impacted morality

Result Reporting
Better than average (p<.05)
No differences (p>.05)
Publication
50% of trials result in publication
Not significantly different (p>.05)

Clinical Development
54% fail in clinical development
Significantly less are incorporated (p<.01)

Conclusion: Resuscitative clinical trials impact clinical care guidelines significantly less than those in other practice areas. Characteristics and standardization of trial design help to increase impact on standards of treatment.