1795 BEYOND THE DEFAULT MALE: EXPLORING SEX DIFFERENCES IN THE ACUTE PHYSIOLOGICAL RESPONSE TO TRAUMA AND ASSOCIATED CLINICAL OUTCOMES

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Aims, Objectives and Background Female patients are consistently outnumbered by males in trauma studies. This introduces bias towards male physiology when developing treatments and protocols and may result in females receiving less efficacious care. Recent studies have looked at sex based differences in injury patterns and outcomes following motor vehicle collisions1 as well as TXA administration following severe injury2. In this study we aimed to describe differences between male and female patients with equivalent injury severities (as assessed by ISS), specifically looking at acute physiological responses to injury and subsequent clinical outcomes.

Method and Design We have sex disaggregated data from over 2000 patients enrolled in the Activation of Coagulation and Inflammation in Trauma (ACIT-II) prospective cohort study (REC: 07/Q0603/29) at the Royal London Hospital. Patients are eligible for inclusion into ACIT-II if they arrive in the Emergency Department within 2 hours of injury and meet the local criteria for a trauma team activation. Blood samples are taken on admission, and physiological parameters and outcome data are collected daily for up to 28 days or until death or discharge. Injury Severity Scores (ISS) were grouped into 'control' (ISS 0-3), 'mild' (ISS 4-8), 'moderate' (ISS 9-15), 'severe' (ISS 16-25), 'critical' (ISS 25-35) and 'super critical' (ISS $\geq$36).

Results and Conclusion Our data showed a number of variations in physiological response between females and males of the same injury severity categories, notably in terms of depth of shock and coagulation. We also demonstrated worse 28-day survival for females compared to males in the higher injury severity groups (severe p = 0.006, critical p = <0.001). This work shows a definite requirement for further study into how sex based differences can affect presentations and outcomes in trauma.

RCEM Lightning Papers

1497 METHODS TO DIAGNOSE CARBON MONOXIDE EXPOSURE: A SCOPING REVIEW

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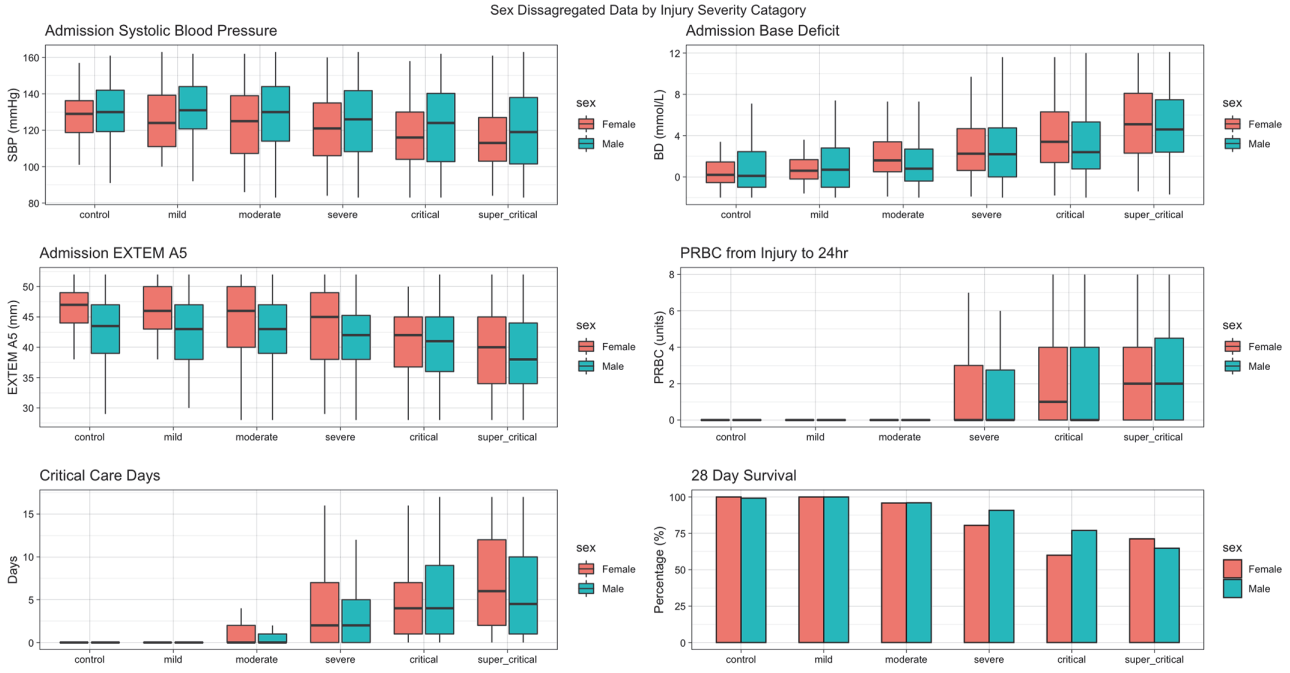
Aims, Objectives and Background Carbon-monoxide (CO) is a colourless, odourless gas produced from incomplete combustion of carbon-containing fuels. Measurement of CO levels to diagnose exposure is difficult due to its short half-life. The effects of exposure to CO range from mild symptoms, such as headache, to neurotoxicity and death.

In this scoping review we aimed to establish the existing methods used in clinical practice and research to determine CO exposure and map the diagnostic cut-off values used.

Method and design We undertook a scoping review to establish methods used in clinical practice and research to measure CO exposure and to determine diagnostic thresholds in each. EMBASE, Medline and CINAHL databases were searched for published articles in English from 2002 onwards using keywords 'carbon monoxide', 'poisoning' and 'diagnosis'. Two reviewers independently screened published abstracts for inclusion, with a third arbiter where there was lack of agreement between reviewers. Full text papers were then reviewed, and data extracted on methods used to measure CO level,



Abstract 1795 Figure 1

diagnostic cut-off values, and whether CO exposure was from a known or unknown source.

Results and Conclusion A total of 85 papers were identified meeting the inclusion and exclusion criteria. The most common methods identified for diagnosing CO exposure were measurement of carboxyhaemoglobin (COHb) in whole blood (50.5%) and CO-oximeter spectrophotometrics (20%). Diagnostic values were poorly reported and varied in non-smokers and smokers. Exhaled CO levels using breath analysers (8.2%) and ambient CO measurement (11.7%) were also documented. Diagnostic threshold values varied between 2–5% in non-smokers and 10–15% in smokers. Several methods are used in clinical practice and research to diagnose CO exposure. There is variation in the cut-off values used to make this diagnosis which is challenging for clinicians and makes comparison of research findings difficult.

1347 SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF ADVOCACY INTERVENTIONS FOR ADULT VICTIMS OF DOMESTIC VIOLENCE WITHIN AN EMERGENCY DEPARTMENT SETTING

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Aims, Objectives and Background Advocacy interventions for survivors of domestic violence is well established and supported by evidence in some community and healthcare settings. Survivors of domestic violence identified in emergency departments have important differences and it is not clear whether evidence can be applied to this population. Therefore, we conducted an inclusive systematic review of controlled studies evaluating the effectiveness of advocacy workers for adult survivors identified in emergency departments.

Method and Design We included studies that reported primary research studies evaluating the effectiveness of advocacy workers in supporting survivors of domestic abuse conducted in emergency departments. We excluded studies that reported screening trials, interventions to increase identification of abuse by healthcare staff, studies conducted on children and studies that weren't reported in English. The search for studies was done via the following online databases from their start dates till February 2022: PubMed/MEDLINE, Cochrane Library, CINAHL/Ebsco, EMBASE and PsycINFO. We anticipated that there would be few high quality double-blinded RCTs and aimed to include before and after studies.

Results and Conclusion We only found one randomised control trial that met our inclusion criteria, and several observational studies which were judged as too weak for inclusion. We found a non-peer reviewed study done as part of a dissertation by a UK emergency consultant, as well as an unpublished randomised controlled trial carried out as part of a PhD thesis. None of the studies we found reported harm from advocacy interventions. The cost effectiveness is uncertain, but likely to be beneficial. We are able to make a weak recommendation that advocacy interventions are likely to helpful, unlikely to be harmful but are of uncertain cost effectiveness. Future research should define meaning outcomes and controlled trials evaluating referral to advocacy are justified. Survivors of domestic violence who present to emergency departments are likely to benefit from referral to advocacy workers.

Abstract 1347 Table 1

Study	Country	Type	Outcome	Key results	Jadad score
Hyman (2002) [8]	US	RCT done as part of a PhD thesis, but published as a dissertation abstract	Reporting of abuse and distress Community resource use Engaging in safety behaviours	Advocacy intervention provided little benefit over standard social service intervention (SSSI); slight decrease in "PTSD-symptomatology" for advocacy group over SSSI	2
Kendall et al. (2009)[9]	USA	Before/after study	Perception of safety Completion of safety plan	Improvements in outcomes, but many unable to reach for follow-up	1
Muelleman and Feighny (1999)[10]	USA	Before/after study	Use of shelters (community resource use) Repeat police calls Full orders of protection Repeat ED visits for domestic violence	Access to meeting an advocate increased shelter use/community resource use, but had no statistically significant effect on repeat police calls, full orders of protection, or repeat ED visits for domestic violence	0
Halliwell et al. (2019)[11]	UK	Before/after study; used community-based IDVAs as comparison	Health outcomes for survivors; risk of being harmed Cost-savings	Chance of safety (calculated using Severity of Abuse Grid filled by IDVAs) for survivors increased two-fold if hospital survivors received continued contact with IDVA in ED Reduction in cost of IPV survivors presenting to ED offsets cost of producing IDVAs	0
Williamson and Boyle (2012)[12]	UK	Before/after study; a service evaluation done as part of a dissertation	Number of repeat ED attendances Risk of death and other injuries	Access to IDVAs resulted in improvements across all outcomes	0