Introduction

In the event of multiple casualties the military medic requires a tool to provide a guide for the sorting and allocation of triage categories. Distinction of causalities has stood alone in the past, the emergence of terrorist events with similar patient presentation of civilian cohorts to that of military cohorts identifies the need to modify civilian triage for such events. Mortality in a number of retrospective studies was identified as 35% within military population compared to 3.4% in the civilian cohort studies. While evolution of triage including an anatomy criteria addresses triage form a different perspective, such triage has poor reproducibility and a low sensitivity. It is impractical as the patient needs to be undressed and is unlikely to detect cavity related haemorrhage in >40% of cases.\(^5,6\)

Evidence

Validation of MMS showed it performed better at predicting the need for life saving intervention than any of the commonly used triage tools TS, START, CF.\(^6\) Both versions of the Military Sieves, MS and MMS, have higher sensitivities than any of the other common sieves for military cohort patients requiring LSI.\(^7\)

Performance

Triage sieves alone are significantly poor predictors of severe injury.\(^7\) Triage sieves which include a physiological parameter such as heart rate (HR), respiratory rate (RR) or an assessment of level of consciousness (LOC), in particularly the motor score (MS) of Glasgow Coma Scale (GCS) have greatly improved triage accuracies and outcomes.\(^7\)

Physiological

Various cardiovascular assessments have been recommended as hypotension has always been associated with increased mortality. While systolic blood pressure remains the gold standard for assessing cardiovascular status this was identified.\(^7\)

While HR has been shown to be a reliable indicator of severity in hospital, it has shown to be less reliable in out-of-hospital triage. Anticipated tachycardia as a response to hypovolaemia is also an unreliable predictor 7. The utilisation of a HR of >90-100 can be safely used with a modest increase in sensitivity.\(^7\)

The inclusion of the shock Index (SI), HR divided by Systolic Blood Pressure (SBP) may be the key to securing a hemodynamic state as a triage parameter.\(^7,11\) Heart rate and blood pressure alone are often poor predictors of a patient’s perfusion status.

The inclusion of GCS is supported in a number of studies and appears to be the single parameter which most strongly predicts serious injury (OR=75). While SBP is identified as the next significant predictor (OR = 32), RR and HR proved to be far less predictive (OR’s 2.5-3.5).\(^7\)

Inclusion of a GCS score of <3 representing “unconscious” is selected for two reasons. It is the level that a non-trained person cannot confuse unconsciousness, and as the sensitivity of the MMS increased with a GCS score of between 9-12 the inclusion of a GCS score of <13 is supported.\(^7\)

Although a GCS of <8 is also highlighted as a strong predictor, the time required to accurately assess GCS is a limiting factor in its use.\(^7\) Adding a consciousness assessment to the triage tools gave an absolute increase in sensitivity in all cases of approximately 5.2%. In MS, sensitivity improved from 52.4% to 62.5%.\(^7\)

Triage, with its roots firmly embedded in military history, derives from the French verb, “trier” to sort. It was conceived by Napoleon’s surgeon Baron Dominique Jean Larrey with “his ambulances volantes” (flying ambulances) during the Napoleonic wars 300-1815. The medical triage system of 1815 was allocated in the medical triage tool of the Napoleonic war was designed for the mass casualties the military medic requires a tool to provide a guide for the sorting and allocation of triage categories. Distinction of causalities has stood alone in the past, the emergence of terrorist events with similar patient presentation of civilian cohorts to that of military cohorts identifies the need to modify civilian triage for such events. Mortality in a number of retrospective studies was identified as 35% within military population compared to 3.4% in the civilian cohort studies.

The proportion of critically injured patients within military MCI means it is essential to have rapid and accurate allocation of triage categories. While the military triage has stood alone in the past, the emergence of terrorist events with similar patient presentation of civilian cohorts to that of military cohorts identifies the need to modify civilian triage for such events. Mortality in a number of retrospective studies was identified as 35% within military population compared to 3.4% in the civilian cohort studies. While evolution of triage including an anatomy criteria addresses triage from a different perspective, such triage has poor reproducibility and a low sensitivity. It is impractical as the patient needs to be undressed and is unlikely to detect cavity related haemorrhage in >40% of cases.\(^5,6\)

Methodology

Electronic databases Medline, Scopus, OVID and EBSCO were searched via the AUT library with key terms “Triage AND “dieing” AND/OR “multiple casualty” AND/OR “mass casualty” and with limits of dates: 2000-2017, English and full articles. Exclusion included specific reports on single events. Twenty-six articles were identified for inclusion.

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