SHORT REPORT

Management of severe sepsis and septic shock in the emergency department: a survey of current practice in emergency departments in England

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Aim: To identify the extent to which emergency departments (EDs) in England are involved in the initiation of the pathway to early goal-directed therapy (EGDT) in patients with severe sepsis and septic shock.

Method: A survey of 173 EDs in England was carried out over a 2-month period starting in March 2006.

Results: 117 (67.6%) departments responded. 22 (18.8%) departments satisfied the following criteria: had a strategy to identify these patients, measured lactate, had a written protocol including EGDT and provided training for their staff. A further 10 (8.5%) EDs were working on initiating the pathway to EGDT.

Conclusion: 18.8% of EDs in England are able to initiate the pathway to EGDT in patients with severe sepsis and septic shock.

In November 2001, Rivers *et al*¹ published the landmark paper on early goal-directed therapy (EGDT) in the management of patients with severe sepsis and septic shock in the emergency department (ED). The early identification and treatment of these patients to achieve central venous saturations of $\geq 70\%$ within the first 6 h of attendance was shown to reduce mortality from 46.5% to 30.5% (number needed to treat is 7). Over 4 years after this publication and 2 years after the publication of guidelines by the Surviving Sepsis Campaign,² the extent to which EDs in England (UK) have embraced EGDT is not known. The aim of this study was to identify the extent to which EDs in England are involved in the initiation of the pathway to EGDT in patients with severe sepsis and septic shock.

METHOD

A one-page survey form was sent to either a named consultant or the lead consultant in all 173 EDs in England. The survey was carried out over a 2-month period starting in March 2006. Responses were anonymous.

RESULTS

The response rate was 67.6%. The estimated annual attendance at the departments who responded to the survey was 8.3 million. In all, 55 departments said that they had a strategy to identify patients with severe sepsis and septic shock. Lactate was measured in 103 departments either by point-of-care tests or in the laboratory. A total of 55 departments had a written protocol, but only 35 included EGDT. Training (a lecture, handouts or practical sessions) was provided by 68 departments in the management of sepsis. A total of 116 departments currently commence fluid and antibiotics, and 84 (71.8%) had heard of the Surviving Sepsis Campaign.

The following criteria are important for the initiation of the pathway to EGDT³: (a) a strategy to identify these patients; (b) measure lactate; (c) have a written protocol including EGDT⁴; and (d) train ED staff.

Of the 117 EDs who responded, 22 (18.8%) satisfied all of the above four steps. A further 10 (8.5%) departments were discussing initiating the pathway to EGDT, with their intensivists.

DISCUSSION

Patients with severe sepsis and septic shock are common, but not a daily occurrence in the ED. Reuben *et al*⁶ identified 75 such patients in 83 000 annual attendances. As EGDT is time sensitive, the ED has a crucial role in identifying and initiating the pathway to EGDT. Depending on staffing, resources and skills, each ED may decide on one of two paths: (1) to identify and fast track these patients to another team or (2) to identify and initiate EGDT in the ED. The four steps mentioned earlier would be common to either path. From the comments received in the survey, most were in favour of implementing EGDT in the ED; however, some believed that the 4 h target was a barrier. I would argue that these are the patients most sick, and the 2% margin in the 4 h target would accommodate such patients. In addition, the resources needed to implement EGDT itself could come from outside the ED (path 1), thus not detracting resources from the rest of the ED. Although it is disappointing that only 18.8% of EDs are able to initiate the pathway to EGDT, it is reassuring that a further 10 departments are in discussion with their intensivists—but this is the minority. There are difficulties faced when trying to implement a time-sensitive treatment pathway for a relatively small number of patients. But most departments have achieved this for patients presenting with acute ST-elevation myocardial infarctions, which present with a similar frequency but smaller mortality compared with severe sepsis and septic shock.

CONCLUSION

Over 4 years after the publication of EGDT in severe sepsis and septic shock, only 18.8% EDs surveyed in England are able to initiate the pathway to EGDT.

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Abbreviations: ED, emergency department; EGDT, early goal-directed therapy