Differences in the Rothman Index Scores in Evolving Emergent Events in Medical-Surgical Patients

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Background: The Rothman Index is an early warning system using software integrated with the electronic medical record, predictive analytics and 26 clinical variables providing a score monitoring patient conditions with display of real time scores and trends. Minimal findings are available regarding differences in Rothman Index scores in medical-surgical patients from admission to time of rapid response, cardiopulmonary resuscitation, or death events.

Objectives: The objective of the study was to explore differences in the Rothman Index score in medical-surgical patients who suffered rapid response, cardiopulmonary resuscitation and death events and determine if evolving events can be identified in medical-surgical patients.

Methods: A retrospective comparative design of 75 subjects with a rapid response or cardiopulmonary resuscitation event on medical-surgical units over a 12-month period at an academic medical center using Rothman Index scores at admission, 48- and 24- hours before and at time of event. The Rothman Index scores were extracted from the electronic medical record. Rothman Index scores range from 0 to 100 with 65–100 indicating low risk of deterioration, 40–65 signifying close monitoring required and less than 40 is representative of high risk of deterioration. Deaths were identified as an outcome immediately following the rapid response or cardiopulmonary resuscitation event.

Results: The Rothman Index score was significantly higher on admission compared to the Rothman Index score at the time of the rapid response or cardiopulmonary resuscitation event (p<0.001). The Rothman Index score at 48 hours prior to the event was significantly higher compared to the Rothman Index score at the time of event (p<0.001). The Rothman Index score at 24 hours before the event was significantly higher compared to the Rothman Index score at event time (p<0.001). No differences were found between the Rothman Index change score in patients who died and those who remained alive (p=0.83).

Conclusions: Differences existed in Rothman Index scores from admission, 48 and 24 hours prior to the time of emergent events. Earlier identification of patient condition changes through the nursing process, combined with an integrated early warning system in the electronic medical record, may reduce emergent events in medical-surgical patients. A collaborative dialogue between nursing and medical staff is crucial to timely recognize and treat conditions to minimize opportunities for emergent events.

Title:
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Keywords:
Early Warning System, Medical-Surgical and Rothman Index
References:


**Abstract Summary:**

The Rothman Index, an early warning system using software integrated with the electronic medical record, provides scores monitoring patient conditions. Minimal findings exist regarding Rothman Index scores in medical-surgical patients. Differences in Rothman Index scores were explored for medical-surgical patients who suffered rapid response, cardiopulmonary resuscitation or death events.

**Content Outline:**

Introduction

Background

Main Point #1 Minimal findings exist regarding Rothman Index scores in medical-surgical patients.

Main Point #2 Rothman Index scores were compared for medical-surgical patients who suffered a rapid response, cardiopulmonary resuscitation or death events at admission, 48 and 24 hours before the event.

Conclusion

Differences existed in Rothman Index scores from admission, 48 and 24 hours prior to the time of emergent events.

Early identification through nursing process and in conjunction with an integrated early warning system in the electronic medical record may reduce emergent events in medical-surgical patients.

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