



Predictive Value of Trending SOFA in Early Management of Sepsis

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Background

- Sequential Organ Failure Assessment Score (SOFA) has been offered as the most precise metric so far for severity of sepsis.
- Predictive value of worsening scores, beginning in the ED, has not been evaluated.

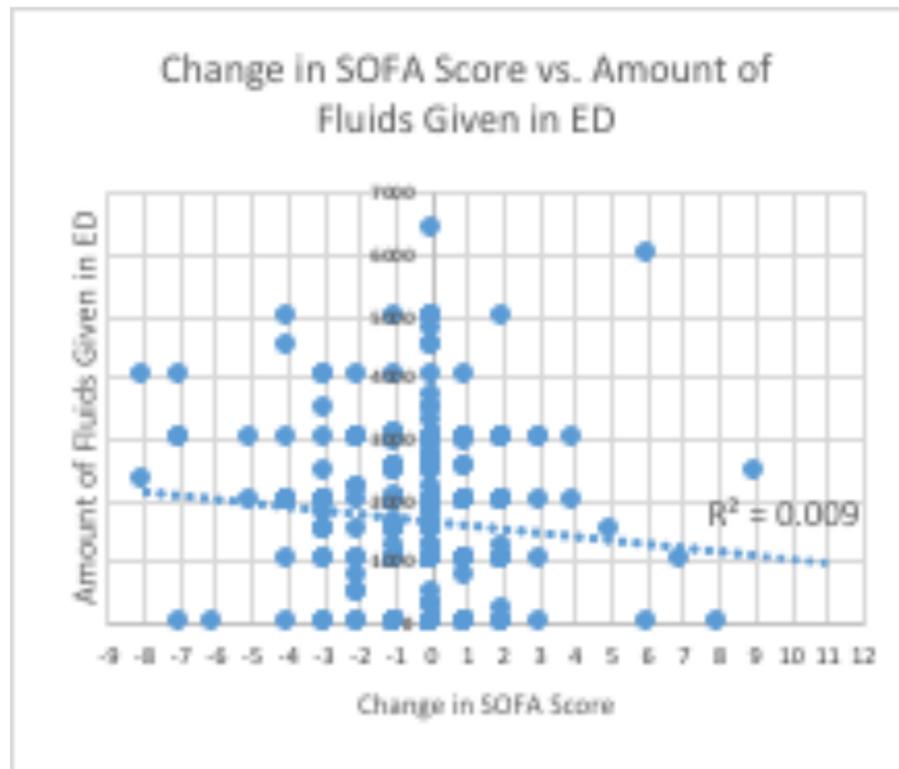
Objective

We assessed the mortality risk of change in first two SOFA scores for all levels of initial sepsis severity. Our hypothesis is that trending of early change in SOFA will provide actionable data to guide resuscitative efforts.

Methods

- Retrospective Chart Review at an Urban Teaching Hospital
- Included 384 patients coded as “sepsis/present on admission” for a four-month period in 2019 (pre-Covid19).
- Calculated initial and second SOFA scores, mortality percentages for 3 levels of SOFA severity, and correlation of percentage death to worsening SOFA scores

Analysis of SOFA Scores



Limitations

- Heterogeneity of patient sample collection and timing confounds interpretation.
- Small size of high sofa score patients confounds the ability to stratify patients into more specific categories.

Conclusions

- **Early trending of SOFA progression in sepsis patients is of marginal benefit compared to the initial SOFA in isolation.**
- Initial SOFA score is highly predictive of mortality, but high-risk patients with improving SOFA still showed high mortality.
- Fluid resuscitation and oxygen may suggest misleading clinical improvements in seriously ill patients.
- Further studies looking at a larger patient size and trending SOFA scores longer could be invaluable to investigating this important research question.

	Mortality %	Avg Change In Sofa
Low Initial Sofa (<5)	3	No Change
Middle Initial Sofa (5-7)	14	Improvement by 2.86
High Initial Sofa (≥8)	36.7	Worsening by 0.86

Results

- SOFA scores seemed to improve with greater amounts of fluid resuscitation, but with poor R2 correlation.
- 11 of the 30 patients in the high risk group expired. 9 of the patients who expired had improved or unchanged SOFA scores on the second SOFA measurement.
- As expected, initial sofa scores correlate with higher in hospital mortality. However, in the high sofa group, improvements in second sofa score did not correlate with improved mortality.