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Sepsis mortality score for the prediction of mortality in septic patients (Article)

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Abstract

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Purpose To derive a prediction equation for 30-day mortality in sepsis using a multi-marker approach and compare its performance to the Sequential Organ Failure Assessment (SOFA) score. **Methods** This study included 159 septic patients admitted to an intensive care unit. Leukocytes count, procalcitonin (PCT), interleukin-6 (IL-6), and paraoxonase (PON) and arylesterase (ARE) activities of PON-1 were assayed from blood obtained on ICU presentation. Logistic regression was used to derive sepsis mortality score (SMS), a prediction equation describing the relationship between biomarkers and 30-day mortality. **Results** The 30-day mortality rate was 28.9%. The SMS was $[\text{elogit}(p)/(1 + \text{elogit}(p))] \times 100$; $\text{logit}(p) = 0.74 + (0.004 \times \text{PCT}) + (0.001 \times \text{IL-6}) - (0.025 \times \text{ARE}) - (0.059 \times \text{leukocytes count})$. The SMC had higher area under the receiver operating characteristic curve (95% CI) than SOFA score [0.814 (0.736–0.892) vs. 0.767 (0.677–0.857)], but is not statistically significant. When the SMS was added to the SOFA score, prediction of 30-day mortality improved compared to SOFA score used alone [0.845 (0.777–0.899), $p = 0.022$]. **Conclusions** A sepsis mortality score using baseline leukocytes count, PCT, IL-6 and ARE was derived, which predicted 30-day mortality with very good performance and added significant prognostic information to SOFA score. © 2017 Elsevier Inc.

Reaxys Database Information

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Author keywords

Interleukin-6 Leukocytes count Mortality Paraoxonase-1 Procalcitonin Sepsis

Indexed keywords

EMTREE drug terms: aryldialkylphosphatase aryldialkylphosphatase 1 arylesterase biological marker interleukin 6 procalcitonin

EMTREE medical terms: adult Article blood analysis controlled study disease association enzyme activity female human intensive care leukocyte count major clinical study male mortality prediction sepsis Sequential Organ Failure Assessment Score

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