A279 - Added value of serial bio-adrenomedullin measurement in addition to lactate for the prognosis of septic patients admitted to icu

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Introduction:
Sepsis mortality remains high (1). The Surviving Sepsis Campaign (SSC) recommends to guide resuscitation on normalization of lactate levels (2), however this is debated (4). We have shown that plasma levels of bio-adrenomedullin (bio-ADM) were associated with patient outcome during sepsis (5). We therefore aimed to evaluate the added value of bio-ADM to lactate measurement in the AdrenOSS cohort.

Methods:
This is a post-hoc analysis of the Adrenomedullin and Outcome in Severe Sepsis and Septic Shock (AdrenOSS) cohort study. The AdrenOSS study is a prospective observational study conducted in twenty-four centers and included 583 septic patients (5). We studied the relationship between the association of initial evolution of lactate plasma levels and bio-ADM level at 24h and outcome in patients for whom both markers were available at admission and one day later (“24h”). Bio-ADM levels below 70 pg/mL were considered as low, and high if greater than 70 pg/mL (5).

Results:
In patients with high lactate levels (>2 mmol/L) at admission (n=328), lactate normalization (<2 mmol/L) at 24h was associated with better outcome than in patients with persistently high lactate at 24h (28-day mortality 15.9% vs 41.9% respectively, HR 3.3 [2.0-5.3], p<0.001) (Figure). Among patients with decreasing lactate, high and low bio-ADM levels at 24h identified patients with different outcomes (28-day mortality 7% vs 26% for low vs high bio-ADM respectively, HR 4.4 [1.6-11.7], p<0.005). High and low bio-ADM levels at 24h also differentiated outcome of patients with persistently elevated lactate (HR 4.5 [1.6-12.3], p<0.005). In patients with low initial lactate, neither lactate or bio-ADM had no added prognostic.

Conclusion:
Our data suggest that measurement of bio-ADM in addition to lactate may help physicians to refine risk stratification and therefore to guide resuscitation during sepsis.

References:
1. Fleischmann C. AJRCCM 2016
2. Levy MM. Crit Care Med 2018
4. Hernandez G. ICM 2019
5. Mebazaa A. Crit Care 2018

Image:
Impact of 24h lactate and bio-ADM values in patients with elevated lactate level at admission. The green curve in the left KM-plot illustrates data from 75 patients with 5 events; the red curve 70 patients with 18 events. The green curve in the right KM-plot illustrates data from 28 patients with 4 events; the red curve 96 patients with 48 events. Of note, differences in numbers between admission (n=328) and 24h (n=269) is related to initial mortality.