



Circulating adrenomedullin estimates survival and reversibility of organ failure in sepsis: the prospective observational multinational Adrenomedullin and Outcome in Sepsis and Septic Shock-1 (AdrenOSS-1) study

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BACKGROUND: Adrenomedullin (ADM) regulates vascular tone and endothelial permeability during sepsis. Levels of circulating biologically active ADM (bio-ADM) show an inverse relationship with blood pressure and a direct relationship with vasopressor requirement. In the present prospective observational multinational Adrenomedullin and Outcome in Sepsis and Septic Shock 1 (, AdrenOSS-1) study, we assessed relationships between circulating bio-ADM during the initial intensive care unit (ICU) stay and short-term outcome in order to eventually design a biomarker-guided randomized controlled trial.

METHODS: AdrenOSS-1 was a prospective observational multinational study. The primary outcome was 28-day mortality. Secondary outcomes included organ failure as defined by Sequential Organ Failure Assessment (SOFA) score, organ support with focus on vasopressor/inotropic use, and need for renal replacement therapy.

AdrenOSS-1 included 583 patients admitted to the ICU with sepsis or septic shock.

RESULTS: Circulating bio-ADM levels were measured upon admission and at day 2. Median bio-ADM concentration upon admission was 80.5 pg/ml [IQR 41.5-148.1 pg/ml]. Initial SOFA score was 7 [IQR 5-10], and 28-day mortality was 22%. We found marked associations between bio-ADM upon admission and 28-day mortality (unadjusted standardized HR 2.3 [CI 1.9-2.9]; adjusted HR 1.6 [CI 1.1-2.5]) and between bio-ADM levels and SOFA score ($p < 0.0001$). Need of vasopressor/inotrope, renal replacement therapy, and positive fluid balance were more prevalent in patients with a bio-ADM > 70 pg/ml upon admission than in those with bio-ADM ≤ 70 pg/ml. In patients with bio-ADM > 70 pg/ml upon admission, decrease in bio-ADM below 70 pg/ml at day 2 was associated with recovery of organ function at day 7 and better 28-day outcome (9.5% mortality). By contrast, persistently elevated bio-ADM at day 2 was associated with prolonged organ dysfunction and high 28-day mortality (38.1% mortality, HR 4.9, 95% CI 2.5-9.8).

CONCLUSIONS: AdrenOSS-1 shows that early levels and rapid changes in bio-ADM estimate short-term outcome in sepsis and septic shock. These data are the backbone of the design of the biomarker-guided AdrenOSS-2 trial.

TRIAL REGISTRATION: ClinicalTrials.gov, NCT02393781 . Registered on March 19, 2015.

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- [30] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=29142>
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- [37] <http://okina.univ-angers.fr/publications/ua19485>
- [38] <http://dx.doi.org/10.1186/s13054-018-2243-2>
- [39] <https://ccforum.biomedcentral.com/articles/10.1186/s13054-018-2243-2>
- [40] <http://www.ncbi.nlm.nih.gov/pubmed/30583748?dopt=Abstract>

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