TITLE (SHORT, 200 CHARACTERS MAX.):

MICROBIOLOGICAL ISOLATION AFTER OHCA AND OUTCOME IN PATIENTS TARGETED TO HYPOTHERMIA OR NORMOTHERMIA: A SUBANALYSIS OF TTM 2

MAIN HYPOTHESES TESTED (2 MAX)

OHCA and hypothermia are associated with a frequently incidence of infections especially pneumonia and bloodstream infections. The main aim is to describe in TTM 2 patients (targeted hypothermia vs. targeted normothermia) microbiological results within the first 7 days after resuscitation as well as their relationships, with time of ROSC – outcome (length of hospital stay and mortality).

The secondary aim is to evaluate the effects of antibiotic treatment and outcome as well as the incidence of isolated microorganisms in different geographical areas

SINGLE CENTER [ ] , MULTICENTER [X]

All TTM 2 centers.

PICO

Patients: All patients admitted in ICU after OHCA included in TTM Trial. Patients dying within 24 hrs are excluded.

Intervention/Exposure/Prognostic factor: None

Comparison: Microbiological isolation in patients treated with targeted hypothermia vs. targeted normothermia

Outcome: in-hospital mortality and length of stay in ICU.

DATA NEEDED FOR THE ANALYSIS
(SPECIFY VARIABLES AND MOTIVATE ANY PROPOSED ADDITIONS TO THE ECRF)

Microbiological results (tracheal quantitative culture and bood culture) during the first 7 days after ROSC as usual clinical practice in each ICU.

We propose to add to eCRF the following data:

- Microbiological tracheal quantitative cultures, type of microorganism and antibiograms.

- Microbiological blood cultures, type of microorganism and antibiograms.

- Type of antibiotics used within the first week

In addition, if feasible:

- Complications: complications arising during the course of the mechanical ventilation was defined as ARDS, pneumonia, sepsis and/or multiorgan failure (cardiovascular, respiratory, renal, hepatic and hematologic, defined as a score higher than two points on the SOFA scale. Pneumonia acquired during ICU stay was defined by modifying Centers for Disease Control and Prevention criteria which require the presence of a new radiographic infiltrate persistent for 48 hours or more plus a body temperature of more than 38.5°C or less than 35.0°C, a leukocyte count of more than 10,000/μ L or less than 3,000/μ L, purulent sputum or change in character of sputum, or isolation of pathogenic bacteria from an endotracheal aspirate. Additionally the CPIS score might be collected within the first week after ICU admission.

LOGISTICS – HOW WILL ADDITIONAL DATA BE GATHERED?

The amount of these data might should be considered within standard of care. In case, cultures and samples might be collected at ICU admission – 3rd ICU day and 7th ICU day.

BRIEF STATISTICAL ANALYSIS PLAN AND SAMPLE SIZE ESTIMATE

From a previous study (Dankiewicz J et al., Resuscitation 2016) we expect an incidence of pneumonia, severe sepsis or septic shock around 50%. Enrolling at least 600 patients (i.e. half of patients to be recruited in TTM2), will allow us to achieve a 90% power (1-β) to detect a difference of $\pm$13% incidence of the composite outcome between the two randomization arms at an α level of 0.05. Moreover, including 600 patients we expect to observe 300 occurrences of the composite outcome, therefore allowing us to include up to 30 covariates in a multivariable logistic regression to identify independent risk factors.

FUNDING (IF APPLICBABLE)

None.

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