

COmbination tHERapy to treat sepsis due to carbapenem-Resistant bacteria in adult and paediatric population: EvidenCE and common practice (COHERENCE)

The COHERENCE Project is a GARDP study on evidence and common practice on the use of combination therapy to treat sepsis caused by carbapenem-resistant bacteria in adult and paediatric population. **The project wants to investigate major limitations of existing evaluation of the effectiveness of combination therapy to treat these infections.**

Major objectives are:

- a) To assess common practice among prescribers and knowledge on evidence on combination therapy;
- b) To define the evidence on effectiveness of combination of antibiotics and its quality;
- c) To develop a methodologically oriented review of *in vitro* and *in vivo* data on combination therapy to design new clinical studies on old and new antibiotics;
- d) To frame data (evidence and common practice) in order to plan focused educational actions to promote safe and efficient use of antibiotics in selected areas.

Target bacteria

Carbapenem-resistant and/or carbapenemase-producing *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*.

The project is divided in 4 activities:

- **Activity 1:** Survey on clinical use: a cross-sectional internet-based questionnaire survey on therapy of sepsis due to the target bacteria.
- **Activity 2:** Systematic review of *in vitro* and *in vivo* data (Cochrane methodology, PRISMA checklist for reporting).
- **Activity 3:** Systematic review of the literature of published clinical trials and studies (including still or not yet published; Cochrane methodology, PRISMA checklist for reporting) and evaluation of quality of studies.
- **Activity 4:** Analysis of strength and weakness of available evidence on association of antibiotics to treat sepsis due to carbapenem-resistant and/or carbapenemase-producing *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii* by MIC value and setting. Identification of logistical and scientific challenges of future studies on combination therapy in the context of the GARDP projects.

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