DIAGNOSTIC BIOMARKERS FOR PREDICTING MORTALITY RISK IN PATIENTS SUFFERING FROM SHOCK

OVERVIEW

Myocardial infarction-derived conditions affect ~43 million people worldwide every year. In 8-10% of the cases (**>4 million people**), the patient **will develop cardiogenic shock (CS) with systemic failure and mortality rates as high as 50%.**

CS is a complex pathology and evolves very rapidly (within hours), with **high mortality rates** and an associated **burden in clinical management** and the **health care system resources**.

PROJECT

Sector: Cardiology

R&D direction:
Prognosis and stratification of cardiogenic shock patients

Stage of development: TRL 4-5

Scientific leader: Dr. Oriol Iborra

Clinical Advisor: Dr. Antoni Bayés

PRODUCT

Potential indications:
Prognosis of CS patients
Stratification of CS patients

Mechanism of action:
Blood biomarker test

Market size: 4M tests per year

Market value: €1,2B per year

IP PROTECTION

National Phases

OPPORTUNITY

License out
Co-development
Spin-off generation

NEEDS

Currently, **patients are diagnosed with their clinical presentation**, but clinicians have to quickly decide whether the use of pharmacological therapy will be enough. Novel therapies are being tested in clinical trials, but are very invasive and extremely expensive.

Thus, is of the utmost importance to **develop an efficient prognostic tool** to determine which patients will benefit from therapies.

SOLUTION

Our project proposes:

We aim to develop an **In Vitro Diagnostic** consisting of **a panel of 4 proteins (CS4P)** and using chemiluminescence immunoassay **(CLIA)**, that can confidently predict the outcome of a patient entering the emergency room suffering from CS.

The first prognostic biomarker test that could help cardiologists determine the highest risk patients after CS to **objectively decide the best course of treatment**, take **quick life-saving decisions**, help tackle **poor resource allocation** and monitor the disease evolution.

KEY ADVANTATGES

- Fast results (<2h vs 2-3days/never)
- Serial measurements (monitoring clinical evolution)
- High predictive power (AUC 0.83 vs 0.73)
- Accurate evaluation: objective support in taking clinical decisions
- Does not require clinical information from the patient
- Can be automated and used in clinical labs

IGTP
Germans Trias i Pujol Research Institute