INFORMED CONSENT FORM

TITLE: the Mechanism of the Downregulation of R-spondin3 in Sepsis-induced Lung Injury

PROTOCOL ID: XHEC-C-2020-084

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Statement

This is a clinical study approved by Xinhua Hospital Ethics Committee Affiliated to Shanghai Jiao Tong University School of Medicine. This form gives you important information about the study with description of research background, process and method, and please take time to review this information carefully.

Taking part in this study is completely voluntary. You do not have to participate if you do not want to, and you will not lose any benefits to which you are otherwise entitled. If you decide to take part in this study, you will be asked to sign this form.

Research background

Acute lung injury (ALI) or acute respiratory distress syndrome (ARDS), is a clinical problem induced by acute and excessive pulmonary inflammation. Sepsis is the most frequent risk factor for ALI/ARDS. Meanwhile, Pulmonary is the most vulnerable organ to fail in response to sepsis, and a major cause of death for sepsis patients is respiratory failure. Despite modern clinical practices in critical care medicine, there still remains a mortality rate as high as 45%. In addition, Vascular endothelial dysfunction is a central event in the pathophysiology of sepsis. Endothelial cell activation is associated with sepsis severity, organ dysfunction and mortality. An improved understanding of endothelial response and associated biomarkers may lead to strategies to more accurately predict outcome and develop novel endothelium-directed therapies in sepsis.

The human and mouse R-spondins encode a family of proteins that includes four paralogs (R-spo1-4). R-spondins are secreted proteins found primarily in the extracellular region and are known to promote β-catenin signaling. Among them, the embryonic lethal vascular remodeling phenotype of R-spondin3 (Rspo3) mutant mice suggests a role of EC derived Rspo3 in angiogenesis. Former studies demonstrated that endothelial Rspo3 enhances cell autonomous non-canonical Wnt signaling, thereby preventing retinal and tumor blood vessel regression and EC apoptosis. The mid-gestational lethality of Rspo3-ECKO mice indicated a role of EC-derived RSPO3 in controlling blood vessel remodeling. Furthermore, Rspo3 protects tissues against mesenteric I/R by tightening endothelial cell junction and improving vascular intergrity. However, the role of Rspo3 in sepsis-induced pulmonary endothelial dysfunction remains unclear. Thus, it is worthwhile to explore the relationship between Rspo3 and sepsis-induced lung injury.

In the present study, the investigators will analyze the expression of Rspo3 in septic patients and sepsis-induced lung injury models and explore whether Rspo3 could protect sepsis-associated lung injury, which will be helpful for prevention and treatment of sepsis-induced lung injury and endothelial dysfunction.

Research process and methods

Firstly, we will collect the blood samples of septic patients when diagnosed as sepsis. Sepsis was defined according to the 2001 International Consensus Conference criteria. All patients admitted to the ICU who develop sepsis are considered for enrollment into the study. Patients under age 18 and those who admitted for ischemic heart disease or cardiac rhythm disorders were excluded. Demographics and clinical variables are recorded. Severity and organ

failure scores are recorded using the Acute Physiology and Chronic Health Evaluation II score (APACHEII) and Sequential Organ Failure Assessment score (SOFA). Blood samples were centrifuged at 3000rpm, 4℃ for 10min and freezed at -80℃ for saving. R-spondin1-4 and the biomarkers of endothelial dysfunction, for example, vWF, VEGFR1, TM, sFLT, etc will be detected according to the instructions of manufacture.

Research significance

Your generous donation will greatly help researchers to analyze the changes of Rspo3 in the plasma of septic patients and the correlation between Rspo3 and vascular endothelial function, as well as the correlation between Rspo3 and the severity of sepsis. Furthermore, it will benefit the diagnosis, prevention and treatment of intraoperative and postoperative complications caused by sepsis.

Privacy policy

Your privacy will be protected.

Signature

I understand the information printed on this form. My questions so far have been answered. I agree to take part in this study.

Signature Date