

Bacteriology and Infectious Diseases

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Novel approach for treating complicated intra-abdominal infection (cIAI) and sepsis

Suchismita Acharya, Pragnya Das, Beamon Agarwal and Santosh K Panda
AyuVis Research LLC, USA

Intra-abdominal infection (IAI) is an important cause of morbidity and mortality. It is the second most commonly identified cause of severe sepsis in the intensive care unit (ICU). Recent studies have associated severe intra-abdominal infection with a significant mortality rate.

Most IAI are a result of processes involving inflammation and perforations of the gastrointestinal tract, such as appendicitis, peptic ulcer disease, and diverticulitis. Patients with diffuse peritonitis may be due to spontaneous perforation, post-operative, post-interventional or post-traumatic causes. The lower GI tract is most often the location of perforation. Among patients with IAI who develop peritonitis, many may progress to severe sepsis, defined by The American College of Chest Physicians/Society of Critical Care Medicine as a severe systemic inflammatory response to infection that is associated with acute organ dysfunction.

AyuVis Research's overarching goal is to develop and commercialize a small molecular weight, water soluble, compound useful in adjunctive and/or in combination therapy via intravenous (IV) dosing for complicated intra-abdominal infection that may lead to sepsis.

We have reported a novel approach to treat secondary or tertiary peritonitis leading to sepsis and death fundamentally different from other reports. This multi-functional small molecule AyuV-25 by virtue of its ability to bind to the active sites of TLR4 can competitively inhibit LPS induced inflammation as well as produce alternately activated macrophages leading to organ protection and tissue repair. Preliminary results from AyuVis demonstrated that compound AyuV-25 protected mice (12 weeks old) against lethal polymicrobial infection in cecal ligation and puncture (CLP) model alone, and in combination with standard antibiotic primaxin via intravenous (IV) dosing. In this presentation, we will discuss some of the preclinical results in animal model.

Biography

Dr. Suchi Acharya has more than 15 years of pharmaceutical drug discovery, development, pre-clinical, clinical and regulatory affairs experiences from Novartis and Alcon Research. She is the founder and CEO of AyuVis Research. She is also the lead inventor of the underlying this small molecule technology and the PI of the SBIR grant sponsored by NIAID/NIH. She is an experienced investigator and also holds Research Assistant Professor position in UNT Health Science Center, Fort Worth, Texas.

sacharya@ayuviss.com

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