Rapid Acting Pharmaceutical for Infectious Disease (RAPID)

A key hallmark of sepsis is loss of epithelial and endothelial barrier integrity thus facilitating fluid to leak into tissues that results in organ failure, shock and death. To date, dysfunction of the endothelial/epithelial barrier has been untreatable. Inthelia Therapeutics is developing a novel small molecule drug, cilengitide, that stabilises the epithelial and endothelial barrier. Inthelia has granted patents to protect use of cilengitide in sepsis and others filed for COVID-19.

BACKGROUND

Sepsis is a major healthcare problem where treatment failure is causing 49 million cases, with 11 million deaths globally each year. It is the no. 1 inpatient hospital expense in the USA, with costs tripling over the last decade to $27 bn. Sepsis is now one of the top 3 causes of hospitalization in over 18's and is responsible for half of all hospital deaths. Non-specific antibiotics fail many of the 49 million sepsis patients annually and increase the risks of the impending AMR pandemic that many predict will lead to >10M deaths by 2050. New antibiotics have a low success rate and therefore the antibiotic pipeline cannot be depended on to solve the impeding sepsis/AMR pandemics. Poor understanding of the early pathophysiology of sepsis has hampered innovation in drug development.

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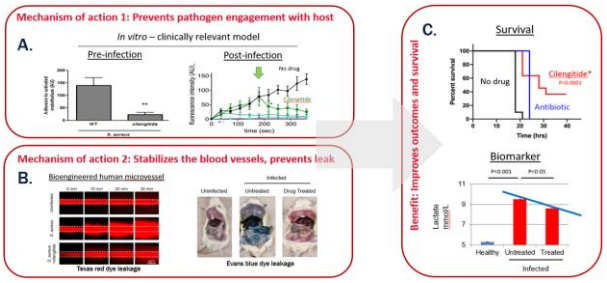
VALUE PROPOSITION

Addressing this clinical gap, Inthelia identified one of the earliest pathophysiological events in sepsis which led to the identification of a higher order therapy for the clinic.

Results from the preclinical trial showed that cilengitide has a profound effect on the survival of the animals: All (100%) of drug-naïve animals died after 18 hrs, 90% of animals treated with antibiotic died after 24 hrs, but 50% of the single-dose, cilengitide-treated animals survived sepsis.

TECHNOLOGY

Inthelia is developing a novel patent protected treatment for sepsis and other infectious diseases. Unlike antimicrobial drugs which target the pathogen, our solution blocks how pathogens bind to blood vessels to cause sepsis or other life-threatening conditions. The solution is based on 1. identifying a key receptor, αvβ3 integrin, to which pathogens bind and 2. identifying a drug, cilengitide, that blocks the interaction. Based on significant pre-clincal data, Inthelia has patented the use of cilengitide to treat sepsis, COVID-19 and other infections. Cilengitide has already been tested in 1,200 patients by Merck and is safe and well tolerated. Inthelia can leverage Merck's data to initiate Phase Ib/IIa clinical trials. Cilengitide can be used more broadly and earlier than other options, such as antibiotics. Also, as it is not an antibiotic, its use will not contribute to antimicrobial resistance (AMR), a serious threat future antibiotic use and risk to human health.



FEATURES	BENEFITS
Inhibition of pathogen binding	Prevents endothelial barrier injury
Non anti-microbial mechanism	Avoids selection for multi-drug resitance
Prophylactic use	Allows early intervention to prevent serious infection
Repositioned drug	Cilengitide previous taken into Phase 3 human clinical trial
Freedom to operate	Cilengitide off patent new patent granted by Inthelia for its use in sepsis

TECHNOLOGY READINESS LEVEL

- Company formed
- Numerous patent applications filed or granted
- In Vivo Proof of Concept achieved.

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