

ABSTRACT

Sepsis is the most common cause of death in the intensive care units worldwide. Despite the undeniable progress in pre- and clinical research, the effective causal therapeutic strategy still does not exist. Given to extremely complex and heterogenic host response to presence of infection, the paradigm „one disease, one drug“ is obviously flawed and combination of multiple targets that involves early immunomodulation and cellular protection are needed. Cellular therapy using mesenchymal stem cells represents strategy that brought positive results in experiments with rodent septic models. Part of this thesis is dedicated to evaluation of safety and efficacy of stem cells intravenous administration to well-established large animal model of progressive peritoneal sepsis. Affecting of the neuroinflammatory reflex through the vagus nerve stimulation showed potential to attenuate sepsis in rodents. Rest of the text is dedicated to evaluation of vagus nerve stimulation effectivity in our model.

KEYWORDS

Sepsis, sepsis-associated acute kidney injury, mesenchymal stem cells, vagus nerve stimulation