救急・災害医学

救急・災害医学講座

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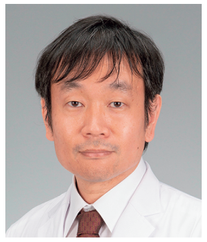

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研究キーワード

敗血症、新規治療薬、人工冬眠療法、抗菌療法、ECMO

主な研究テーマ

1. 敗血症の機序解明とDAMPs/PAMPs制御による新規治療薬の探索
2. 敗血症性筋萎縮に対する人工冬眠療法
3. 敗血症の予後を改善する抗菌療法のエビデンス構築

産業界や自治体等へのアピールポイント

■ 敗血症における人工冬眠療法

人工冬眠療法には臓器保護作用があり、敗血症における臓器障害への応用へ取り組んでいます。

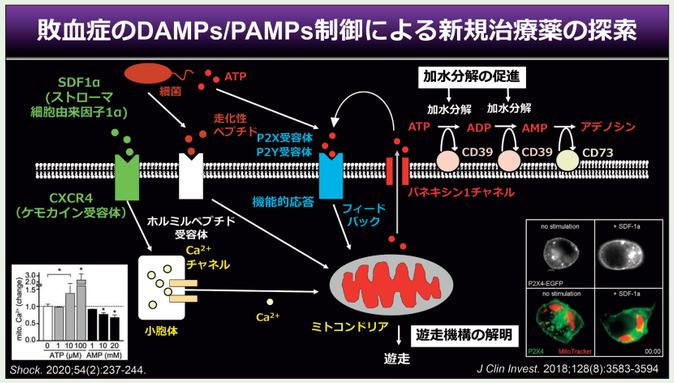
■ 敗血症に対する新たな抗菌療法

抗菌薬は敗血症の根本的治療の一つであり、効果的な投与法に関する新たなエビデンスを構築します。

▶ 研究ピックアップ

敗血症のDAMPs/PAMPs制御による新規治療薬の探索

敗血症は感染に伴う臓器障害であり、DAMPs（Damage associated molecular patterns）やPAMPs（Pathogene associated molecular patterns）がその進展に重要な役割を及ぼします。そのためDAMPs/PAMPs制御による敗血症の進展を抑制し予後を改善する新規治療薬を探索します。またDAMPsであるアデノシン一リン酸(AMP)が過剰になると生体内で人工冬眠を誘導することがわかっており、敗血症性筋萎縮に対する人工冬眠療法の効果を検討しています。



社会実装への可能性

敗血症におけるPAMPs/DAMPs制御を通じて、新規治療薬を開発します。

Department of Emergency and Disaster Medicine

Website

Keywords

Sepsis, Novel Therapeutics, Artificial Hibernation Therapy, Antimicrobial Therapy, ECMO

Main Research Topics

1. Exploration of Novel Therapeutics through Mechanistic Elucidation of Sepsis and Regulation of DAMPs/PAMPs
2. Artificial Hibernation Therapy for Sepsis Associated Muscle Wasting
3. Establishing Evidence for Antimicrobial Therapy to Improve Clinical Outcomes of Sepsis

Appeal to Industry and Local Government

■ Artificial Hibernation Therapy for Sepsis

Artificial hibernation therapy has organ-protective effects, and efforts are being made to apply it to organ dysfunction in sepsis.

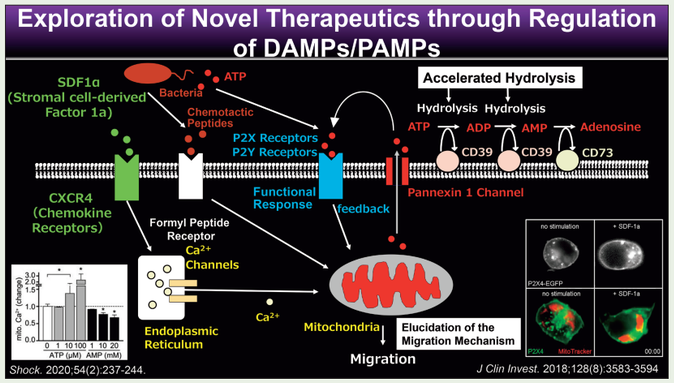
■ Novel Antimicrobial Therapy for Sepsis

Antibiotics are one of the definitive treatments option for sepsis, and new evidence is being developed regarding effective administration.

▶ Research Synopsis

Exploration of Novel Therapeutics through Regulation of DAMPs/PAMPs

Sepsis is an organ dysfunction caused by infection, with DAMPs (Damage-Associated Molecular Patterns) and PAMPs (Pathogen-Associated Molecular Patterns) playing a crucial role in its progression. Therefore, novel therapeutics are being explored to suppress the progression of sepsis and improve prognosis through the regulation of DAMPs/PAMPs. Additionally, it has been found that excessive levels of AMP (Adenosine Monophosphate), a DAMP, can induce artificial hibernation in the body. The effectiveness of artificial hibernation therapy for sepsis-induced muscle atrophy is being investigated.



Potential for Application in Society

Developing novel therapeutics through the regulation of PAMPs/DAMPs in sepsis.