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The Shift of an Intestinal "Microbiome" to a "Pathobiome" Governs the Course and Outcome of Sepsis Following Surgical Injury.

Abstract

Sepsis following surgical injury remains a growing and worrisome problem following both emergent and elective surgery. Although early resuscitation efforts and prompt antibiotic therapy have improved outcomes in the first 24 to 48h, late onset sepsis is now the most common cause of death in modern intensive care units. This time shift may be, in part, a result of prolonged exposure of the host to the stressors of critical illness which, over time, erode the health promoting intestinal microbiota and allow for virulent pathogens to predominate. Colonizing pathogens can then subvert the immune system and contribute to the deterioration of the host response. Here, we posit that novel approaches integrating the molecular, ecological, and evolutionary dynamics of the evolving gut microbiome/pathobiome during critical illness are needed to understand and prevent the late onset sepsis that develops following prolonged critical illness.

Citation

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