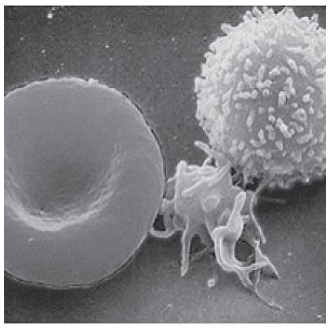
ICU
MANAGEMENT & PRACTICE

New Therapy for White Blood Cell Impairment in Septic Patients



New research published in the Journal of Leukocyte Biology shows that white blood cells in patients with sepsis are severely impaired compared to non-septic patients. Thus, treating the white blood cells of sepsis patients with antibodies that block programmed cell death-1 (PD-1) and programmed cell death ligand (PD-L1) molecules may restore their function and ultimately their ability to eradicate deadly bacteria, according to researchers.

The research team is optimistic that this study will lead to a better understanding of why patients with sepsis are often unable to fight invading microorganisms. "Furthermore, we hope that this study will stimulate new therapies to treat sepsis based on stimulating various components of the immune system," says author Andriani C. Patera, PhD, of the Infectious Disease and Vaccines Department, MedImmune LLC, Gaithersburg, Maryland, USA.

See Also: Study: Modelling At-Risk Sepsis Patients in the ED

Dr. Patera and colleagues conducted a prospective study in which blood from patients with life-threatening infections was obtained and white blood cells were tested for their ability to control bacterial infection. The white blood cells from patients with sepsis were compared to white blood cells from critically ill patients who did not have infections.

White blood cells from the patients with sepsis were severely impaired compared to non-septic patients, the researchers found, and PD-1 and PD-L1 were identified as key mechanisms responsible for white blood cell impairment.

"There is increasing evidence for immune dysfunction in sepsis. Immune dysfunction is now therapeutically correctable by targeting PD-1 in chronic diseases such as cancer and chronic infections," according to John Wherry, PhD, Deputy Editor of the Journal of Leukocyte Biology. Given these new data, the opportunity increases in treating a devastating acute and rapidly progressing inflammatory disease with an approach learned and tested in humans in immune oncology, he adds.

Source: Federation of American Societies for Experimental Biology
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Published on : Tue, 6 Dec 2016