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IIT Roorkee finds role of WBC markers in sepsis-related complications

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Neutrophils, monocytes, and macrophages are white blood cells (WBCs) that act as scavengers of dead cells and foreign bodies such as bacteria and other pathogens



Researchers at the Indian Institute of Technology (IIT) Roorkee, led by Prof Pranita P Sarangi, Department of Biosciences and Bioengineering, have shown the role of specific immune cell markers on the outcomes of severe infection and sepsis.

This study, funded by the BioCARe Women Scientist grant and Innovative Young Biotechnologist Award grant from the Department of Biotechnology, GoI, has provided important insights into the role of immune cell markers on sepsis-related complications.

In this study, Prof Sarangi's group used two mouse models of sepsis to show the role of integrins in sepsis. When there is an infection, monocytes move from blood circulation and bone marrow towards the infected/inflamed tissue. Once inside the tissues, these monocytes further mature into macrophages and by sensing the signals from the septic environment, these cells gradually switch their functions from inflammatory to immunosuppressive subtype that correlate with their integrin expression profile.

"These findings will help in detecting the stages of sepsis and appropriate treatment," said the lead researcher," said the lead researcher Shiba Prasad Dash.

Results from this research work have been published in The Journal of Immunology, the official journal of the American Association of Immunologists (AAI) and presented at the international conferences organized by the Indian Immunology Society (Immunocon-2019).