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Australian researchers invent smart nanotech tool toÃ?Â fight fungal infections

August 25, 2021 | News

New nanobiotechnology called Ã¢â?¬Ë?micelles' can remarkably battle Candida albicans and other fungus causing secondary infections in COVID-19 cases



Scientists in the University of South Australia in partnership with Monash University, have created new nanobiotechnology called ‘micelles’, which has a remarkable ability to battle one of the most invasive and notoriously resistant fungal infections – *Candida albicans*.

Candida albicans is an opportunistic pathogenic yeast that is extremely dangerous to people with compromised immune systems, particularly those in a hospital setting. It is the most prevalent cause of fungal infections worldwide and can cause serious infections that can affect the blood, heart, brain, eyes, bones, and other parts of the body. The invention is considered a timely finding, especially given the significant rise of dangerous fungal infections in hospitals with countries overrun by COVID-19.

UniSA’s Professor Clive Prestidge, a Senior investigator, stated that the new polymer-based nanobiotechnology (micelles) could revolutionise current anti-fungal medicines. He noted that managing and treating invasive fungal infections is particularly challenging because so many fungal biofilms are resistant to contemporary antifungal drugs.

Fungal biofilms are surface-loving microbials that thrive on implanted devices such as catheters, prostheses and heart valves, making the presence of these devices a major risk factor for infection. In places like India – which has nearly 40,000 new COVID-19 infections every day – hospital resources are severely stretched, leaving healthcare workers are not only battling COVID-19 but also dealing with complacency and fatigue.

The unfortunate result is that infection control practices have deteriorated, putting patients on mechanical ventilation at greater risk of developing bacterial or fungal infections. As fungal biofilms tend to seed recurrent infections, finding ways to break and beat the infection cycle is critical, especially now.