

CLINICAL UPDATE - Date: 30/03/2024

Topic: **METAGENOMICS: Deep diving into unknown pathogens/microbes**

Venue: Rajarajeswari Medical College and hospital.

Audience: Clinicians, faculty and Postgraduates of 24 medical disciplines.

Rajarajeswari Medical College and hospital is a 1200 bed tertiary care hospital that caters to low-income group patients from surrounding semi-rural areas and villages till Bidadi and Ramanagara. Three Clinical cases, 2 from patients with Sepsis, and 1 patient with Surgical Site infection were presented. The common factor with all the 3 cases were the isolation of MDR and PDR *Klebsiella pneumoniae* by conventional culture techniques.

Then the audience were shown how WGS was performed on MINION platform on these 3 clinical isolates and AMR genes were identified in our research lab. The focus was on how Nanopore technology can help us identify AMR genes and therefore alter treatment options in real time for clinicians. The idea was to bring this technology to young postgraduates as well who could use it in their research projects. The take home message was: Nanopore technology being used as research tool is scalable as a real-time diagnostic tool to give better patient outcomes to our low-income group patients of rural areas covered by our hospital.

In the Question & Answer session: Clinicians from Pulmonology department were interested in Drug resistance in Tuberculosis patients using Nanopore. Dermatology faculty enquired about Antifungal resistance detection in their patients by NGS.