Writeup – World TB day CME

The **CME on World Tuberculosis Day** was organized by the **Department of General Medicine** at **Sri Chamundeshwari Medical College, Hospital & Research Institute (SCMCH & RI), Channapatna**. The event was held on **8th April 2026** at **9:00 AM** in the **ACS Auditorium**.

The CME was conducted under the theme *"Yes! We Can End TB!"* and brought together faculty, students, and healthcare professionals to discuss advances in TB diagnosis, management, and elimination strategies. The program was accredited with **1 KMC credit point** for registered delegates.

The sessions highlighted the importance of early diagnosis, integration of modern technologies, and collaborative efforts in line with the WHO's End TB strategy, reinforcing the institution's commitment to TB elimination.

Dr. Pallavi G S, Assistant Professor from the Department of Microbiology, delivered a comprehensive talk in the CME on *"From Smear to Smart Systems: AI and Newer Advances in Tuberculosis Diagnosis"* between 09:15 and 10:00 AM. She began by contextualizing the global burden of tuberculosis, noting that TB remains the leading cause of death from a single infectious agent and continues to challenge public health systems worldwide. Linking her presentation to the WHO's **End TB Strategy**, she emphasized that early, accurate, and universal diagnosis is one of the cornerstones for achieving TB elimination targets.

Her lecture traced the diagnostic journey from conventional smear microscopy and culture methods—long considered the gold standard but limited by sensitivity and turnaround time—to modern innovations that integrate **automation, molecular biology, and artificial intelligence**. She explained how LED fluorescent microscopy, automated liquid culture systems (MGIT, BacT/Alert), and rapid molecular platforms such as **CBNAAT, Truenat, LAMP, and Line Probe Assays** have revolutionized TB detection by reducing diagnostic delays and enabling drug resistance profiling. Dr. Pallavi highlighted the importance of **AI-enabled systems** that can automate slide reading, interpret molecular data, and assist clinicians in resource-limited settings, thereby bridging gaps in expertise and infrastructure.

She also introduced **emerging technologies** such as whole genome sequencing, electronic nose devices, Raman spectroscopy, MALDI-TOF, and biomarker-based assays, which promise precision diagnostics and personalized treatment approaches. Immunological methods like **TB LAM, IGRA, and novel antigen-based skin tests** were discussed as adjunct tools, particularly useful in HIV-positive and immunocompromised populations.

Dr. Pallavi concluded by stressing that no single test can address all diagnostic needs; instead, a **multi-modal approach combining conventional, molecular, immunological, and AI-driven techniques** is essential. She underscored that strengthening diagnostic capacity is directly linked to reducing transmission, detecting drug-resistant TB early, and achieving the ambitious **End TB targets set for 2027 and beyond**. Her session was highly appreciated for its clarity, depth, and relevance, inspiring participants to adopt innovative diagnostic strategies in clinical practice and research.