

Teasing out the challenges in TB vaccine development & India's potential in joining the race!

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Tuberculosis (TB), the leading killer of adults worldwide, kills one person in every 18 seconds. The recent surge of TB in the developing world has been exacerbated by many causes including HIV pandemic, multi-drug resistance, and debilitating health systems across resource constrained settings. One third of the world population harbor the causative organism *Mycobacterium tuberculosis* in latent form (non-replicating persistent state) due to successful containment of the infection by effective immune response in the host, but these individuals are at risk of developing clinical disease later. We still don't know the precise factors which determine protection versus susceptibility to TB.

The presentation would allude to the "known unknowns and unknown unknowns" in the TB pathogenesis portraying the need for elucidating the differences in the immune response between people exposed to TB who never become sick and those who develop TB in normal situations as well as in the context of HIV/AIDS. This requires establishment of longitudinal studies across the most endemic regions around the globe in a harmonized collective way using multidisciplinary approach with thematic focus. It demands enormous coordination and strategic thinking before the launch of this huge endeavor to define biomarkers of protection and disease for designing new intervention(s) and propelling development of effective and novel vaccines.

India offers rich fertile ground for diversities in terms of pathogens, hosts (patients and cohorts) as well as environment along with its talented pool of brainpower and manpower which can be harnessed to tease out the finer immune protective mechanisms from the human population to bring novelties to the bench for vaccine development.

Biography

Shreemanta Parida is an infectious disease clinician scientist with PhD in immunology and a distinguished career over quarter of century in many centers of excellence in Europe; WHO-IRTC, Geneva, Giessen, MPIIB, Berlin, Pasteur Institute, Brussels and University of Oxford. He returned to India in May 2011 after 22 years in Europe & Africa (AHRI, Addis Ababa, Ethiopia for 3 years) to head the Vaccine Grand Challenge Program of DBT of Ministry of Science and Technology of Govt of India. Prior to this, he successfully led the Grand Challenges in Global Health Consortium of 15 institutions across three continents including 7 partners from Africa in 5 countries on "Biomarkers of protective immunity against TB in the context of HIV/AIDS in Africa" based at Max Planck in Berlin.

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