



KASTURBA MEDICAL COLLEGE
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RESEARCH TALK SERIES 2022

Mechanistic insights into stress-induced pancreatic beta-cell dysfunction in Type 2 Diabetes Mellitus



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Biosketch: Dr. Shilpy Sharma is a UGC-Assistant Professor working at the Department of Biotechnology, Savitribai Phule Pune University, Pune, India. She joined the same department in June 2013 as a DBT-Ramalingaswami Fellow. Before moving to Pune, she worked as a post-doc fellow at the Department of Pharmacology, University of Michigan, USA and at the Department of Surgery, University of Chicago. Currently, her group at DBT, Pune University is trying to understand the pathophysiology of type 2 diabetes wherein attempts are being made to identify novel biomarkers for identifying individuals at risk. She has several publications in journals of high impact and repute including Nucleic acids research, Journal of allergy and clinical immunology and Biological chemistry.

Talk Abstract: The incidence of type 2 diabetes mellitus (T2DM) – a chronic metabolic disorder – is at an all-time high and has been associated with changes in lifestyle, diet, lack of physical exercise, etc. Among the different factors that contribute to the establishment and progression of T2DM, exposure to high glucose and saturated free fatty acids has been identified as one of the major stressors that leads to dysfunction and death of pancreatic beta-cells. Using INS-IE cells (insulin-secreting beta-cells from rats), our lab has identified o-phosphocholine and UDP-N-acetylcholine as the major metabolites that shows significant perturbation upon exposure to both these stressors alone and/or in combination. These studies have further been followed up in an independent cohort of diabetic subjects and healthy volunteers. The results from these investigations will be elaborated and discussed.



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