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Endocrinology & Metabolic Syndrome

Organoids and diabetes: The changing landscape of laboratory medicine

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Abstract

Diabetes, undeniably pivots around most of the major killers on our planet, regardless of it's direct impact on atherosclerotic cardiovascular diseases (ASCVD). Though conventional diagnostic & therapeutic approaches are continuously evolving and improving, still these aspects remain handicapped due to limited prognostic nature and being least informative about pharmacogenomics. With diabetic population now surpassing most counts, there is an emerging need to not only developing newer tools of diagnosis & modalities for curative therapeutics. Recent emergence of these 3-D cell culture, commonly termed as "Organoids" provides in many ways a human organ like environment which have been over last decade or so been widely used for various in vitro testing for disease modelling and therapeutic drug evaluation. Organoids, while being useful addition to learning personalized pathogenesis in various diseases can also be useful in diabetes by exploring the specific genetic defects using newer biotechnologies. Furthermore, the journey from diagnostic models to human organ donations is also reaching closer to proof of concept, which will redefine the science organ donation not only in terms of demand and supply issues, but also being safer in terms of various donor recipient rejection and avoidance of immunosuppressive medications. Utilizing the concept of organoids in diagnostics hopefully will allow evaluation of exact of molecular pathogenesis by multiplexing molecular techniques like polymerase chain reactions or newly emerging CRISPR /Cas technologies along with prior assessment of best fit medication for diabetes as per the identified pathogenesis.

Biography

Sikandar Hayat Khan is a Medical profession. He did his fellowship in Chemical Pathology from Pakistan and later did a Post-graduate diploma in Endocrinology and Diabetes from UK. He later managed to complete my Masters in Cancer, Molecular Pathology & Genomics from UK. Over 25 years in the field of his medical profession, he managed to publish over 65 publications in the field of metabolic diseases especially type -2 diabetes mellitus, insulin resistance, lipidology. In recent years he developed specific interest in molecular pathology of metabolic diseases including type-2 diabetes mellitus.

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