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ATINER's 2020 Series of Academic Dialogues

The Future of Health and Medical Studies: Teaching and Research

Speaker: Dr **Andriana Margariti**, Senior Lecturer, The Wellcome-Wolfson Institute of Experimental Medicine, Queen's University Belfast, U.K.

Title: Patient Specific Blood Vessels Organoids are shaping the Future of Health and Medical Studies Proving Opportunities for Teaching and Research.

Summary

It is estimated that by 2025 there will be 380 million people with diabetes. Many of these patients will suffer from a range of macro and microvascular complications which can lead to ischaemic heart disease, stroke, limb amputation, kidney failure and blindness. Beyond controlling hyperglycaemia, dyslipidaemia and/or hypertension, there is limited scope to prevent the initiation and progression of these endpoints with most interventions being late-stage and after considerable tissue damage has already ensued. Treatment options involve the use of insulin sensitisers, α -glucosidase inhibitors, and β -cell secretagogues which are often expensive, limited in efficacy and carry detrimental adverse effects.

Approximately one half of patients with type 2 diabetes die prematurely of a cardiovascular cause due to defects on blood vessels. Consequently, there is an urgent need for further research and clinical studies based on multi-disciplinary programmes to allow effective treatments for diabetes to be discovered. Towards this direction, we have recently generated patient specific blood vessels, which are great models for drug screening and cell based therapies. This has also opened the horizon for further teaching and training opportunities, which will allow Personalised and Regenerative Medicine to transform the field of diabetes and improve the quality of life for millions of patients.