

Understanding cancer metabolism, microstructure, host tissue vasculature and response to drug treatment through preclinical models and imaging

Professor Harish Poptani

Chair for the Centre for Preclinical Imaging
Department of Molecular and Clinical Cancer Medicine
University of Liverpool



Date: 11 June 2025

Time: 3:30 pm - 4:30 pm

Venue: YEUNG-Y4702, 4/F

Yeung Kin Man Academic Building

Abstract

Glioblastoma (GBM) is one of the commonest types of brain tumour in adults with a median survival of less than 16 months after initial diagnosis. It is highly resistant to treatment, probably due to heterogeneity, aberrant metabolism and perfusion. Although conventional imaging methods including MRI are adequate for initial diagnosis, they often fail in accurately predicting the tumour grade, prognostication (IDH mutation) or response to treatment. It is essential to develop preclinical models that accurately mimic the human cancer to test novel drugs and imaging assays. This talk will provide a brief overview of cancer models highlighting their advantages and limitations. Since metabolic and micro-structural changes precede changes in tumour volume, the talk will highlight key findings from our research group demonstrating the utility of multi-parametric MR methods to assess GBM metabolism, microstructure and hemodynamic changes that can be used to assess treatment response to novel therapeutics.

Biography

Professor Poptani is the Chair for the Centre for Preclinical Imaging at the University of Liverpool, United Kingdom. His research focusses on development of cutting-edge non-invasive imaging methods for cancer diagnosis and evaluating early treatment response. His work spans from preclinical studies in rodent models of disease to the application of imaging methods in patients. He has published over 160 papers in journals of international repute. As the chair of the centre for preclinical imaging (CPI), his group has been developing imaging methods for evaluating the safety and efficacy of stem cell therapies with applications in kidney diseases and brain disorders. He serves as an Associate Editor for Molecular Imaging and Biology, serves on multiple funding review panels and has been recognised as a Fellow of the ISMRM for his contribution to the field of MR in cancer.