Vinay K. Puduvalli

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Dr Puduvalli's research focuses on developing new treatments for brain malignancies using a combined approach of targeted therapies, innovative clinical trial designs and rational combinations of anticancer agents. His clinical expertise includes care of patients with brain and spine malignancies, as well as neurological complications of cancer.

His laboratory research focuses on identifying vulnerabilities in gliomas in order to target these with novel agents using a variety of pre-clinical models. His team has also identified novel ways to target stress response and energy metabolism in gliomas to specifically target tumor cells while sparing normal ones. In a translational context, he has led several multicenter clinical studies involving epigenetic therapies and novel targeted agents. He has served as a mentor for students, residents, fellows, junior and senior faculty over the past 2 decades.

He serves in national leadership roles in the Society of Neuro-oncology and has served on advisory boards, review boards and study sections for national and international federal and industry agencies.

Topic: Uncovering New Vulnerabilities in Gliomas: Emerging Concepts and Therapeutic Opportunities

Clinical outcomes of patients with high grade gliomas have remained poor due to tumor heterogeneity, the immunosuppressive microenvironment in these tumors and lack of availability drugs that are brain penetrant. Conversely, growing insights into the biology and genetics of these tumors have uncovered new vulnerabilities that may provide opportunities for effective treatments. This talk will review some novel approaches to address tumor heterogeneity of high-grade gliomas through targeting pathways that can disable tumor cells regardless of their genetic status or tumor subtype and are in early clinical trials. Such approaches include targeting energy metabolism through NAMPT inhibition and epigenetic modulation of proteins through PRMT5 inhibition. It will also review a novel approach to high grade gliomas into "immune hot" tumors by activating phagocytic function in myeloid cells within these tumors and potentially making them vulnerable to immunotherapies. Such approaches have the potential to overcome longstanding challenges in the treatment of high-grade gliomas and improve survival of these patients.