Increased mortality in adult survivors of childhood low grade glioma treated with radiotherapy: A population based study

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Determinants of long-term survival in adult survivors of pediatric low grade glioma (PLGG) is largely unknown. We sought to uncover clinical and treatment-related risk factors impacting long-term survival in PLGG. This was a retrospective population based study where collected long-term follow-up information for all PLGG patients diagnosed in Ontario, Canada from 1985-2012 (n=1202) and determined factors affecting long-term survival. The impact of upfront radiation treatment on overall survival was validated against an independent cohort from the Surveillance, Epidemiology and End Results (SEER) database (n=2402). At a median follow-up of 12.73 (0.02-33) years; only 93 deaths (7.7%) were recorded with 20 year overall survival (OS) of 90.1+1.1%. Children with NF1 had excellent survival. Adverse risk factors included pleomorphic-xanthoastrocytoma (p<0.001) and thalamic location (p<0.001). Upfront radiotherapy was associated with three-fold increased risk of overall late deaths (p=0.001) and four-fold increased risk of tumor-related deaths (p=0.013). In multivariate analysis radiation therapy was the most significant factor associated with late all-cause deaths and tumor-related deaths; p=0.013. This explains that PLGG have a chronic clinical course and is associated with excellent long-term survival which is hampered by increased delayed mortality in patients receiving upfront radiotherapy. These observations should be considered while deciding treatment options for these patients.

Biography
Rahul Krishnatry was awarded MD in Radiotherapy from Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh in 2010. He received Dr JM Pinto Gold medal in 2009 for his research in Image based brachytherapy for cervical cancer. He worked for 3 years in Tata Memorial Hospital and received several awards for research papers at national and international forums. He was awarded International Development and education award from ASCO in 2012. He was the first Indian to receive International research development fellowship grant from Society of NeuroOncology. He completed two years of clinical research fellowship in Neuro Oncology at Sickkids Hospital, Princess Margaret Cancer Center, Toronto with translational research focus on pediatric low grade glioma (Tabori Lab) in July 2015. He is currently working at Mazumdar Shaw Cancer center, Bangalore. He has published more than 20 papers in reputed peer reviewed journals and has presented in more than 25 abstracts in various international conferences.

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