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SUPAWADEE PUT-TI-NOI : INVESTIGATION OF MICROSATELLITE ALTERATIONS IN CHILDHOOD AND ADULT GLIOMAS. THESIS ADVISORS: WIPAWAN THANGNIPON, Ph. D., SONGSAK PETMITR, Ph. D., APIWAT MUTIRANGURA, M.D. Ph. D. 142P. ISBN 974-662-860-7

The aim of this study was to investigate microsatellite alterations in childhood and adult gliomas. Microsatellite instability (MSI) and loss of heterozygosity (LOH) on chromosomes 2p, 3p, 10q, 17q and 17p were determined in 30 cases (23 adults and 7 children) of brain tumors using polymerase chain reaction (PCR) to amplify the following microsatellite loci: D2S123, D3S1283, D10S537, D10S185, D10S541, D10S581, D10S1744, D17S791, D17S579, D17S795, D17S805 and D17S786. The PCR products were separated by denaturing polyacrylamide gel electrophoresis and detected by silver staining. After examination, the frequency of MSI in adults with high-grade gliomas was found to be higher than that in adults with low-grade gliomas. No different in LOH on chromosome 10 was found between adults with low-grade and high-grade gliomas, but LOH on chromosome 17 in adults with high-grade was higher than that in adults with low-grade gliomas. The frequency of MSI was 67% (2 of 3) in high-grade childhood gliomas. The frequency of LOH in childhood gliomas was 33% for chromosome 17, but was absent for chromosome 10. Survival follow up over five months showed that 3 cases died, 19 cases were alive, and there was no information for 8 cases. These collective observations suggest that LOH on chromosome 17 may be intimately involved in tumor progression.