Gene mutation analysis of sinonasal lymphomas in Indonesia.

Department of Anatomical Pathology, Faculty of Medicine, University of Indonesia/Dr. Cipto Mangunkusumo Hospital, Jalan Salemba Raya, Jakarta 10430, Indonesia.

Sinonasal lymphomas comprise NK/T-cell (NKTCL) type and B-cell type with unique geographical development. In this study, mutations of p53, K-ras, c-kit, beta-catenin, and bak gene were analyzed using polymerase chain reaction (PCR)-single strand conformation polymorphism (SSCP) followed by direct sequencing in 41 sinonasal lymphomas (27 NKTCL and 14 B-cell type) from Indonesia. In situ hybridization study with EBER-1 probe revealed that 85% of NKTCL cases were EBV positive, but none of B-cell type was EBV positive. Frequency of mutations in p53, K-ras, c-kit, beta-catenin, and bak gene was 62.9%, 0%, 11.1%, 18.5%, and 25.9%, respectively, in NKTCL, and 71.4%, 0%, 23.1%, 21.4%, and 57.1%, respectively, in B-cell cases, showing that mutation frequency in all genes was higher in B-cell than in NKTCL cases. These findings suggest that gene mutations might be the driving-force for B-cell lymphoma, whereas combined EBV infection and gene mutations contribute to NKTCL development in Indonesia.