Editorial

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Evaluation of TP53 mutations among hematological malignancies patients in Jeddah, Saudi Arabia

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Tumor protein 53 is the most frequently mutated gene in human cancer. TP53 gene is located on the short arm of chromosome 17 and encodes for TP53 protein which plays a significant role in many cellular processes such as apoptosis, cell cycle arrest, genomic stability and DNA repair. In hematological malignancies, the prevalence of p53 mutations is low compared to other tumors but associated with a complex karyotype, poor prognosis and poor response to chemotherapy. Due to the lack of data in the prevalence and prognostic value of TP53 mutations among hematological malignancies in Saudi patients, we aimed in this study to evaluate the frequency and prognostic significance of TP53 mutations in different hematological malignancies in Jeddah, Saudi Arabia. Ten (10) samples from different hematological malignancies were tested for TP53 mutations using a next-generation platform. 1/10 samples showed the incidence of a heterozygous mutation at codon 175 (exon 5) of the p53 gene that replaces histidine with arginine. The mutation was found in an MDS patient and associated with a complex karyotype and TP53 gene deletion. The data showed that incidence of TP53 mutations in hematopoietic malignancies are infrequent which are consistent with the general observations. Interestingly, the mutation which we observed in our study was never been reported in the available p53 mutations databases, indicating the first discovery of this mutation. Further studies are needed to analyze a larger number of Saudi hematopoietic malignancies to find whether this mutation is unique in a certain population.