Association between *TNF-α* -308G>A and -238G>A gene polymorphisms and TNF-α serum levels in Mexican colorectal cancer patients

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ABSTRACT. The objective of this study was to examine the association between TNF-α serum levels and -308G>A and -238G>A

polymorphisms in the corresponding gene by comparing healthy subjects to colorectal cancer (CRC) patients from a Mexican population. Serum levels of TNF-α were found to significantly differ between CRC patients and controls (P = 0.001), but no relationship between the -308G>A and -238G>A polymorphisms and increased CRC risk was established (P > 0.05). However, an association between the -308G>A variant and disease became evident when the distribution of AA-GA genotypes was examined in patients with hematologic toxicity (neutropenia) and those without (odds ratio = 3.356, 95% confidence interval = 1.295-8.698, P = 0.013). The GG haplotype was more common in controls than CRC patients, with a frequency of 0.85 among the former, but this difference was not significant (P > 0.05). In conclusion, TNF-α serum levels and AA-AG genotypes of the *TNF-α* -308G>A polymorphism may significantly contribute to CRC susceptibility in the population examined in this investigation.

Key words: -308G>A; -238G>A; TNF-α; Haplotype; Colorectal cancer; Mexican population