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Analysis of microsatellite instability and loss of heterozygosity in ovarian cancer: a study in the population of Espírito Santo, Brazil

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ABSTRACT. Ovarian cancer is currently the most lethal gynecological malignancy in women. It is a heterogeneous and cytogenetically complex disease previously associated with genomic instability. Our purpose was to analyze microsatellite markers to determine patterns and levels of instability as well as possible correlations with histopathological parameters. Polymerase chain reaction was used to characterize microsatellite instability (MSI) and loss of heterozygosity (LOH) in 24 ovarian tumors at 12 microsatellite loci. A total of 11 samples displayed MSI or LOH. Only low-level MSI was found. Markers D5S346 and CYP11 showed the highest MSI and LOH frequencies. D17S250 LOH was significantly associated with tumor histological type (P = 0.0003), and estrogen receptor α was also associated with tumor histological type (P = 0.048) when a combined analysis of LOH and MSI was performed. Furthermore, LOH was observed in a greater number of markers compared with those displaying MSI. Thus, our results support that MSI is less common than LOH in ovarian cancers.

Key words: Genomic instability; MSI; LOH; Ovarian cancer

