PTEN promoter methylation and LOH of 10q22-23 locus in PTEN expression of ovarian clear cell adenocarcinomas.

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Abstract

OBJECTIVES: Loss of phosphatase and tensin homolog (PTEN) expression is common in ovarian clear cell adenocarcinomas (OCCA), but PTEN mutations are not frequently observed in OCCA. The mechanism of PTEN gene silencing in OCCA is still not clear. MATERIALS AND METHODS: Immunohistochemical analysis of PTEN expression was performed in 40 OCCA paraffin-embedded tissues. PTEN promoter methylation in 24 OCCA tissues and 5 OCCA cell lines was examined by methylation-specific PCR. Eighteen OCCA patients and 13 serous adenocarcinomas were analyzed for loss of heterozygosity (LOH) at 10q23 with five polymorphic markers. RESULTS: Of the 40 OCCAs, 37.5% (15/40) had reduced PTEN immunoreactivity, LOH was found in 33% (6/18) of OCCAs, and 31% (4/13) of serous adenocarcinomas. In the 33% of OCCAs with LOH, only 33% (2/6) lost PTEN expression. PTEN promoter was unmethylated in 5 OCCA cell lines and 24 OCCA tissues detected by MSP-PCR. No significant correlation between PTEN expression and advanced stage disease or overall survival was found. CONCLUSION: Our results indicate that reduced PTEN expression was detected in more than one third of OCCA cases. Neither PTEN promoter methylation nor LOH at 10q23 locus is significantly related to PTEN inactivation and is not an adverse prognostic factor in OCCA.