Expression and mutation analyses of Fas, FLIP and Bcl-2 in granulosa cell tumor of ovary

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ABSTRACT

Aims and background. Mounting evidence indicates that evasion of apoptosis contributes to tumor pathogenesis. Although both Fas and Bcl-2 are crucial in apoptosis of normal ovarian cells, their roles in ovarian tumors, especially stromal tumors, are largely unknown. The aim of this study was to explore mutation of the Fas gene and expression of the apoptosis-related proteins Fas, FLICE-like inhibitory protein (FLIP) and Bcl-2 in granulosa cell tumor (GCT) of the ovary.

Methods. We analyzed the expression of Fas, FLIP and Bcl-2 in 20 GCT tissues by immunohistochemistry. We also analyzed somatic mutations of the Fas gene in the same GCT tissues by polymerase chain reaction and single-strand conformation polymorphism assay.

Results. Expression of Fas was evident in 12 GCTs (60%), but the remaining 8 GCTs showed no or markedly decreased Fas immunostaining. Expression of FLIP was identified in 30% of the GCT samples and expression of Bcl-2 in 75%. All GCTs with positive Fas expression (n = 12) showed either FLIP or Bcl-2 expression. The GCTs were found to carry no somatic Fas mutations.

Conclusions. Our data show that alterations of the apoptosis-related proteins Fas, FLIP and Bcl-2 are common in GCT, and suggest that expression of FLIP and Bcl-2 and loss of Fas expression might play role in the pathogenesis of GCT, possibly by inhibiting apoptosis.

Key words: granulosa cell tumor, Fas, FLIP, Bcl-2, expression, apoptosis.

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