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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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