Minocycline inhibits growth of epithelial ovarian cancer.

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Source

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Abstract

OBJECTIVE:

These studies were designed to determine whether minocycline inhibits ovarian cancer growth in vitro and in vivo and the molecular mechanisms involved.

MATERIALS AND METHODS:

The effect of minocycline on ovarian cancer cell proliferation, cell cycle progression and apoptosis was assessed using human ovarian cancer cell lines OVCAR-3, SKOV-3 and A2780. Then, the capacity of minocycline to inhibit growth of OVCAR-3 xenografts in female nude mice was examined.

RESULTS:

Minocycline inhibited cell proliferation and colony formation, down-regulated cyclins A, B and E leading to arrest of cells in the G(0) phase of the cycle and suppression of DNA synthesis. Furthermore, exposure of these cells to minocycline led to DNA laddering, activation of caspase-3 and cleavage of PARP-1. In nude mice bearing subcutaneous tumors, minocycline suppressed tumor proliferation index, angiogenesis and tumor growth.

CONCLUSION:

These findings provide the initial basis for further evaluation of minocycline in the treatment of ovarian cancer.