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Expression analysis of caspase-6, caspase-9 and BNIP3 in prostate cancer

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ABSTRACT

Aims. Altered regulation of cell death is a feature of human cancer. The aim of this study was to explore whether the expression of the proapoptotic proteins caspase-6, caspase-9, and Bcl-2/adenovirus E1B-19kDa-interacting protein3 (BNIP3) is altered in prostate cancers.

Methods. We analyzed the expression of caspase-6, caspase-9, and BNIP3 in 107 prostate adenocarcinoma tissues by immunohistochemistry using a tissue microarray (TMA) method.

Results. Normal glandular cells expressed caspase-6 and BNIP3 proteins in 10 (9.3%) and 9 (8.4%) prostate tissues, respectively. By contrast, the prostate cancers expressed caspase-6 and BNIP3 in 65 (60.7%) and 69 (64.5%) cases, respectively. Prostate intraepithelial neoplasia (PIN) showed caspase-6 and BNIP3 expression in 65% and 65% of cases, respectively. We observed caspase-9 expression in 40 (37.4%) normal, 8 (40%) PIN, and 45 (42.1%) cancer tissues. None of the expression of caspase-6, caspase-9 or BNIP3 was associated with pathological characteristics such as tumor size, patient age, Gleason score, or tumor stage.

Conclusion. Our data showed that prostate cancer and PIN cells display higher expression of the proapoptotic proteins caspase-6 and BNIP3 than normal cells. Neoexpression of these proteins from the PIN stage suggests that apoptosis deregulation might occur in the early stage of prostate carcinogenesis, and that altered expression of proapoptotic proteins may be a feature of prostate cancer. **Free full text available at www.tumorionline.it**

Key words: caspase-6, caspase-9, BNIP3, prostate cancer, immunohistochemistry.

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