Predictive and Prognostic Factors
in Cervical Carcinomas
Treated with (Chemo-) Radiotherapy

av

Louise Bohr Mordhorst

Akademisk avhandling

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Linköpings universitet

Örebro universitet
Institutionen för hälsovetskap och medicin
701 82 ÖREBRO
Abstract


A series of 131 women with cervical carcinoma FIGO stage I-IV were treated with external radiotherapy and intracavitary brachytherapy. In 47 patients (36%) concomitant chemotherapy was given. One hundred and twenty-one tumors (92%) achieved complete remission. Addition of chemotherapy increased primary cure rate to 98%. Tumor stage, tumor size, and histology were significant predictive factors for primary cure. Treatment related factors were: brachytherapy dose and interruption of irradiation.

Thirty-nine recurrences (30%) were recorded. Tumor stage, histology, and concomitant chemotherapy were significant predictive factors.

The 5-year cancer-specific survival rate of the complete series was 65%. Tumor size was a strong prognostic factor in multivariate analysis.

Serum samples from 44 patients were analyzed. Ten candidate biomarker proteins with regard to tumor recurrences were identified.

Five Hedgehog proteins were analyzed with immunohistochemistry. Residual tumor, local and distant recurrences and survival rate were associated with PTCH, SMO and GLI2. In the Wnt-β-catenin study intense staining of the membranes and nuclear staining > 5% were of significant predictive and prognostic value. Intense nuclear APC staining was associated with recurrences and cancer-specific survival rate.

Conclusion: Histology, tumor size and brachytherapy dose were important clinical predictive and prognostic factors. Multiprotein analysis identified ten biomarker proteins associated with tumor recurrences. Three proteins (PTCH, SMO, and GLI2) in the Hedgehog pathway were of predictive and prognostic value. In the Wnt-β-catenin pathway intensity of β-catenin membrane staining and accumulation in the nuclei as well as nuclear APC-expression were of predictive and prognostic value.

Keywords: cervical carcinoma, radio-chemotherapy, biomarkers, predictive factors, prognostic factors, multiprotein analysis, Hedgehog pathway, Wnt/β-catenin pathway

Louise Bohr Mordhorst, School of Health and Medical Sciences, Örebro University, SE-701 82 Örebro, Sweden, louise.bohr-mordhorst@regionorebrolan.se