

Evaluation of the role of immunohistochemical expression of EGFR (ERB B1) and Her4 (ERB B4) in urinary bladder urothelial carcinoma

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Background: EGFR (ERB B1) and HER4 (ERB B4) are members of the ERB B family of receptors. Overexpression of ERB B receptors has both prognostic and therapeutic significance in various malignancies including breast, colorectal, prostate and ovarian cancer. However, the prognostic significance of their expression in urothelial carcinoma remains controversial. The aim of this work is to evaluate the prognostic value of EGFR and HER4 in urothelial carcinoma of urinary bladder.

Material & Methods: Fifty (50) archived cases of urothelial bladder carcinoma, cases of which had synchronous metastatic lesions in lymph nodes, as well as 13 samples of normal ureters were studied by immunostaining for EGFR and HER4.

Results: Membranous EGFR, cytoplasmic HER4 and nuclear HER4 expression were detected in 74%, 46% and 32% of urothelial carcinoma, respectively; and 15.4%, 100% and 0% of normal ureteric samples, respectively with statistically significant differences between the two groups regarding the expression of both markers ($p < 0.05$). Membranous EGFR as well as nuclear HER4 expression showed statistically significant association with non-papillary tumors, high histologic grade and advanced tumor stage ($p < 0.05$). There was a highly statistically significant inverse relationship between cytoplasmic and nuclear HER4 expression ($p = 0.0001$) as well as between EGFR and cytoplasmic HER4 expression ($p = 0.001$). There was no statistically significant association between EGFR and nuclear HER4 expression ($p = 0.051$).

Conclusion: EGFR and nuclear HER4 expressions were associated with parameters of poor prognosis in urothelial carcinoma while cytoplasmic HER4 expression was related to good prognostic indicators. Both markers may help in selecting high-risk patients for more aggressive therapy

Biography

Nafissa El Badawy is a Professor of Pathology at Ain Shams University, Cairo, Egypt. She completed her PhD. She had Post-graduate Fellowship at Emory University, Atlanta, Georgia, USA. She also had a Fellowship in Dusseldorf, Germany. She is the President of Egyptian Fellowship of Pathology Program in Egypt. She is Editor in the *African Journal of Urology* and *Journal of Egyptian Society of Pathology*.

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