

Hedgehog signalling molecule, SMO is a poor prognostic marker in bladder cancer

ABSTRACT

Introduction: Hedgehog (HH) pathway is an important signalling cascade for growth and patterning during embryonic development. Constitutive activation of Hedgehog pathway can be found in various types of malignancies including medulloblastoma, basal cell carcinoma, gastrointestinal, breast, pancreatic, prostate cancer and leukaemia. Little is known about the expression and role of Hedgehog signalling in bladder cancer. **Materials and methods:** The purpose of this study was to investigate the immunohistochemical expression of SMO in 112 bladder cancer cases and determine their association with demographic and clinicopathological parameters. Bladder cancer tissues were obtained from the Hospital Kuala Lumpur. **Results:** SMO was expressed in the cytoplasm of all cases of bladder cancer. 6 cases (5.4%) showed low expression, while 106 cases (94.6%) showed high expression. Positive expression of SMO protein was correlated with a few variables which include grade and stage of tumour, lymph node metastasis and distant metastasis. SMO expression showed statistically significant association with higher grade ($p=0.001$) and higher stage ($p=0.042$) of bladder cancer. SMO expression also showed borderline association with lymph node metastasis ($p=0.056$). **Conclusion:** These findings indicate that SMO expression may be a poor prognostic marker in bladder cancer.

Keyword: Hedgehog pathway; SMO; Immunohistochemistry; Bladder cancer