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Evaluation of HER2 expression in gastric and gastroesophageal junction adenocarcinoma and its correlation with relevant clinicopathological parameters

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Gastric and gastro esophageal junction adenocarcinoma(GEJ) is one of the most common malignant tumors and a major cause of cancer death worldwide, especially in developing countries.

Overexpression of c-erbB-2/neu (HER2) oncogene has been linked to clinical outcomes in several solid tumors, such as breast cancer. However, its association with the prognosis of the disease and survival in gastric adenocarcinoma remains unclear.

Aims and Objectives: To investigate the frequency of HER2 expression in gastric and gastroesophageal junction adenocarcinoma and its association with various clinicopathological parameters and survival.

Materials and Methods: We included 60 prospective cases of both biopsies and resected specimen at Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India. HER2 expression was detected using immunohistochemistry(IHC). Expression of c-erbB-2/neu was further correlated with different clinicopathological parameters.The rate of survival was calculated by Kaplan Meier method (Log rank test) and Cox regression analysis using SPSS 20 software.

Results: Out of the 60 patients studied 47 were male and 13were female. We found 21(35%) positivity(scor 2+ and 3+) for HER2 expression in gastric adenocarcinoma. Our results showed no significant association between c-erbB-2/neu expression and gender, age, tumor location, degree of differentiation and lympho-vascular invasion (P>0.005). Patients with HER2 overexpression tumors (score 2+ or 3+) had significantly shorter mean event free survival times than those with HER2 negative expression (score 0 or 1+) tumors (mean survival time, 39.3vs 22.9 months, respectively; P = 0.001on the log rank test). On Cox regression survival analysis, HER2 overexpression remained an independent prognostic factor (hazard ratio, 0.53; P = 0.003).

Conclusion: Developing new molecular target therapy against HER2 may be one possible strategy for the treatment of gastric and gastro esophageal junction adenocarcinoma patients. These results should encourage further investigation of treatments using new molecular targeting agents against HER2 protein to improve the survival of patients.

Biography

Nisha Raj, PhD scholar (ICMR-JRF) from Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India. Her research interest focuses on cancer biology specifically in the field of biomarkers and its therapeutic role on human tissue. She has done both graduation and postgraduation in Biotechnology. She has two manuscript published, as:

- Nisha Raj PhD1, Divya Verma PhD2, Ashok Kumar MCh3, Praveer Rai DM4, Ram Nawal Rao MD*5 "Prognostic significance of membrane associated Human Epidermal Growth Factor Receptor2 in Gastric Adenocarcinomas".
- Divya Verma1, Nisha Raj1, Pallavi Prasad1, Rangnath Mishra2, Amit Agarwal1 and Ram Nawal Rao1* "Pathological findings using cell blocks can successfully be used in place of tissue biopsies in diagnosing HER2 positive tumors in Breast Cancer".

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