The effect of Pol ι expression on prognosis postoperative adjuvant radiotherapy in patients with esophageal cancer

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Abstract (300 word limit)

Statement of the Problem: DNA polymerase iota (Pol ι) is an error-prone DNA polymerase involved in translesion DNA synthesis (TLS) that contributes to the radiation-resistance of esophageal cancer. The present study aimed to investigate the effect of Pol ι expression on prognosis postoperative adjuvant radiotherapy in patients with esophageal cancer. Methods: The correlation between Pol ι expression and prognosis of postoperative adjuvant radiotherapy was analyzed using immunohistochemical method in 97 patients who underwent radical resection of esophageal cancer. Findings: There were 20 cases with low expression of Pol ι and 77 cases with high expression of Pol ι in these patients. Survival curve showed Pol ι expression was negatively correlated with prognosis of postoperative adjuvant radiotherapy for esophageal cancer, and COX regression analysis indicated that Pol ι expression was one of the independent prognostic factors of postoperative adjuvant radiotherapy for esophageal cancer. Conclusion & Significance: Pol ι may be a potential molecular marker for postoperative adjuvant radiotherapy in esophageal cancer.

Recent Publications (minimum 5)

1. Yang J, Chen Z, Liu Y, et al. Altered DNA polymerase iota expression in breast cancer cells leads to a reduction in DNA replication fidelity and a higher rate of mutagenesis. Cancer Res, 2004, 64(16): 5597-607.

2. Lee GH, Matsushita H. Genetic linkage between Pol iota deficiency and increased susceptibility to lung tumors in mice. Cancer Sci, 2005, 96(5): 256-59.

3. Zhou J, Zhang S, Ding WQ, et al. Over-expression of DNA Polymerase iota in Esophageal Squamous Cell Carcinoma. Cancer Sci, 2012, 103(8):1574-1579.

4. Zou S, Shang ZF, Zhou J, et al. DNA polymerase iota (Pol ι) promotes invasion and metastasis of esophageal squamous cell carcinoma. Oncotarget, 2016,7(22):32274-85.

5. Liu J, Wu JC, Zhou JD. Effects of POL Ⅰ on radiosensitivity of human esophageal cancer cell line and its sensitivity to cisplatin. Acta Universitatis Medicinalis Nanjing(Natural Science), 2013, 33(1):6-10.

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