Association of cyclin D1 and survivin expression with sensitivity to radiotherapy in patients with nasopharyngeal carcinoma

S.M. Fu1, M.X. Xu2, S.M. Lin3, Z. Liang1 and J.H. Cai1

1Department of Medical Examination, Hainan Provincial People’s Hospital, Haikou, China
2College of Agriculture, Hainan University, Haikou, China
3Department of Radiotherapy, Hainan Provincial People’s Hospital, Haikou, China

Corresponding author: S.M. Fu
E-mail: fushengmiao@126.com

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ABSTRACT. The association between cyclin D1 and survivin protein expressions with radiotherapy sensitivity in patients with nasopharyngeal carcinoma was investigated. Biopsy specimens of 72 patients with nasopharyngeal carcinoma were collected before the initiation of radiotherapy (49 cases were in the radiation-sensitive group and 23 cases were in the radiation-insensitive group). Conventional hematoxylin and eosin staining was used for tissue typing. The immunohistochemical SP method was used to detect cyclin D1 and survivin protein expression levels. The IBM SPSS Statistics 20 statistical software was applied for conducting the chi-squared test and the Spearman correlation analysis. In the 72 cases, the high expression rates of cyclin D1 were 28.6% (14/49) and 69.6% (16/23) in the radiotherapy-sensitive group and in the radiotherapy-insensitive group, respectively, and the differences between groups were statistically significant (P < 0.05). The high
expression rates of survivin were 34.7% (17/49) and 73.9% (17/23) in the radiotherapy-sensitive group and in the radiotherapy-insensitive group, respectively, which differed significantly (P < 0.05). The protein expressions of cyclin D1 and survivin were positively correlated (Spearman’s r = 0.353, P < 0.05). Cyclin D1 and survivin expression levels were negatively correlated with the radiosensitivity of nasopharyngeal carcinoma. Cyclin D1 and survivin may be used as molecular markers to predict the sensitivity of radiotherapy.

Key words: Cyclin D1; Survivin; Nasopharyngeal carcinoma