The Prognostic Role of Serum CXCR4 in Metastatic or Recurrent Colorectal Cancer

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Aim: The CXCR4 is involved in several aspects of tumor progression including angiogenesis, metastasis, and survival. However, whether serum CXCR4 level in metastatic or recurrent colorectal cancer (CRC) has a prognostic role has been not evaluated.

Methods: We analyzed serum samples from 55 patients with advanced CRC diagnosed between March 2008 and July 2011. Blood was collected before beginning systemic chemotherapy and serum CXCR4 levels were quantified by commercially available ELISA kit.

Results: The median age of the 55 patients was 62 years (range: 39-82) and all patients received systemic chemotherapy of 2 or more line. The median serum CXCR4 level was 283.47 pg/ml (range, 77.48-846.52). Patients with 2 or more of metastatic sites, liver metastasis, or over more normal level of CA 19-9 (>37) showed significantly higher level of serum CXCR4 than patients without. The median overall survival of all patients was 19.53 months. There was significant difference for OS between patients with lower CXCR4 level (≤ 248.0 pg/ml) and higher CXCR4 level (> 248.0 pg/ml) (p = 0.046). The median OS was 26.50 (95% CI, 17.37-35.63) and 17.03 (95% CI, 14.67-19.39) months. Univariate analysis showed that liver metastasis, no debulking operation and higher level of CXCR4 (>248.0) had significantly poor prognostic value regarding OS (p < 0.05).

Conclusions: Serum CXCR4 level was positively correlated with disease burden (2 or more of metastatic sites, liver metastasis, or over more normal level of CA 19-9). And there was significant difference for OS according to the level of CXCR4. These findings suggested that CXCR4 might be useful as surrogate marker of clinical outcome in metastatic or recurrent CRC.

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