RADIOTHERAPY

Interstitial fluid pressure predicts radiation response

Unregulated angiogenesis is thought to lead to increased interstitial fluid pressure in solid tumors. A previous study showed that pretreatment interstitial fluid pressure could predict radiation therapy response in patients with cervical cancer. Yeo and colleagues recently investigated whether interstitial fluid pressure could predict long-term outcome in patients with cervical cancer treated with radiotherapy.

In this single-center prospective trial, tumor interstitial fluid pressure was measured in 55 patients with cervical cancer between August 1998 and September 2002. The interstitial fluid pressure was measured before treatment and during radiation therapy (median dose of 28.8 Gy delivered in 16 fractions).

Median interstitial fluid pressures were 29.0 mmHg when measured before radiation therapy and 20.0 mmHg when measured mid-radiation therapy. The pre-radiation interstitial fluid pressure was significantly higher in adenocarcinomas than in squamous-cell carcinomas ($P = 0.028$). Patients who achieved complete responses had reductions in mid-radiation interstitial fluid pressures. Pre-radiation therapy interstitial fluid pressure was an independent prognostic factor for local and distant recurrence-free survival.

Measuring mid-radiation therapy interstitial fluid pressure could be useful in predicting radiation therapy responses. Pre-radiation therapy is a significant predictor of local and distant relapse-free survival in patients with cervical cancer after radiation therapy.

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Original article Yeo, S. G. *et al.* Interstitial fluid pressure as a prognostic factor in cervical cancer following radiation therapy. *Clin. Cancer Res.* **15**, 6201–6207 (2009).