


 THYROID CANCER

Reduced serum VEGF-D levels in metastatic differentiated thyroid cancer

Patients with metastatic differentiated thyroid carcinoma (DTC) have decreased serum concentrations of the cytokine vascular endothelial growth factor D (VEGF-D), according to Italian researchers.

VEGF cytokine family members (VEGF-A, C and D) regulate angiogenesis, lymphangiogenesis and vasculogenesis, and increased expression of VEGF-A and VEGF-C has been linked to metastatic spread. Moreover, “VEGF-D has been shown to have an important role in the lymphatic diffusion of metastases,” says senior investigator Carlo Carella from the Second University of Naples.

After thyroidectomy and radioiodine treatment, 96 patients followed up for metastatic DTC were assigned to three groups according to their plasma thyroglobulin levels, which were measured every 4 to 6 months. One group that had no evidence of disease was described as ‘cured’ (group 1), another

had increased thyroglobulin levels after stimulation with rhTSH (group 2) and a third had raised basal thyroglobulin levels (group 3). Patients in group 2 had locoregional metastases, and group 3 consisted of patients with locoregional metastases only, as well as those with locoregional metastases and lung and/or bone metastases.

“...serum VEGF-D levels were reduced in patients with metastatic spread”

The researchers found that baseline serum VEGF-D concentrations in the cured group were similar to age-matched and sex-matched healthy controls, whereas in comparison, serum VEGF-D levels were reduced in patients with metastatic spread. Stimulation with rhTSH did not affect serum VEGF-D differences between the cured group and patients

in group 2. VEGF-D is thought to be a competitive agonist for VEGF receptors, and reduced levels could allow increased binding of VEGF-A and VEGF-C, thus promoting metastasis.

Now, the investigators are turning their attention to the mechanisms underlying the reduction in VEGF-D levels. They suggest that a tumor-generated factor could downregulate VEGF-D production and contribute to metastatic diffusion. “Identification of a molecule able to reduce VEGF-D production, not only in normal tissues but also in the tumor, could be a very interesting goal for the treatment of thyroid cancer,” concludes Carella.

Andy McLarnon

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