Angiogenesis and solid tumors

abstract: Background: Angiogenesis is an important component in the progression and metastasis of solid tumours. Angiogenesis is also critically involved in the pathogenesis of hematologic malignancies. Current data suggest important prognostic and therapeutic implications of angiogenesis in a variety of malignancies of the haematopoietic system, including acute and chronic leukemias, myeloproliferative diseases, multiple myeloma, non-Hodgkin's lymphomas, and Hodgkin's disease. This study aims at clarifying the role of angiogenic factors, vascular endothelial growth factor (VEGF) and endostatin in the pathogenesis of leukaemia and lymphoma in children, and to asses if these factors can be used as a prognostic factor for leukaemia and lymphoma.

Materials and methods: The present study examined the levels of VEGF and endostatin using ELISA technique in 40 cases, 20 cases presenting with acute leukemia (13 with ALL and 7 with AML) and 20 cases presenting with lymphoma (13 with NHL and 7 with HD).

Results: Serum levels of VEGF and endostatin were significantly higher at diagnosis and after complete remission than controls. Serum levels of VEGF have significant correlation with platelets, WBCs, Hb concentration and endostatin at diagnosis in cases of leukemia and lymphoma, but have no significant correlation with age. Serum levels of endostatin have significant correlations with Hb concentration and VEGF, but have no significant correlation with age, platelets count and WBCs. No significant differences could be found in serum VEGF and endostatin in different types of leukemia and lymphoma and patients with organomegaly or without organomegaly.

Conclusions: These data suggest that VEGF and endostatin expression ascribes an important role in children with leukemia and lymphoma. They may have a prognostic role for follow up of cases with leukemia and lymphoma.

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