Solid Tumour Section
Mini Review

Soft Tissue Tumors: Soft Tissue Leiomyosarcoma

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Identity

Note
Soft Tissue Leiomyosarcoma is a relatively rare malignant tumor. It may be difficult to be distinguished from gastrointestinal stromal tumors and Schwann cell neoplasms. To make a correct identification of soft tissue leiomyosarcoma, immunostaining with several smooth muscle differentiation markers (actin, calponin and desmin), and negative staining results with S100 (to rule out Schwann cell neoplasm), c-kit and CD34 (to rule out gastrointestinal stromal tumors) is needed.

Clinics and pathology

Clinics
The annual new cases in the U.S. are over 6,000. The five year survival rate after diagnosis is about 50%.

Genes
Soft tissue leiomyosarcoma was classified based on salient gene expression characteristics. Three types of leiomyosarcoma were proposed: 1) "Simplification" of gene expression in leiomyosarcoma, characterized by dramatic down regulation of large number of genes; 2) "Inflammation related" gene expression, characterized by the prominent presence of lymphocyte specific genes in the analysis; and 3) "neural" gene expression, characterized by neuronal gene expression. Among these subtypes, simplification gene expression is associated with the poorest prognosis, while inflammation related one the best.

Prognosis
Local recurrent tumor, positive surgical margins, >50 years age, >20 mitoses per high power field are adversely associated with survival.
Phylogenetic tree of leiomyosarcomas and normal smooth muscle. Expression levels of 92 cDNA sequences from table III through V were analyzed for 11 leiomyosarcoma tissues. Experiment cluster analysis was performed using Michael Eisen's cluster tool and tree view. Data input and normalization of individual experiments were performed in GeneSpring™ 4.2 before imported into cluster tool. Red indicates high expression level, while green for low, black for no expression. The cutoff expression level for non-expressor was set at 200 arbitrary units. Pathological grade (G) for each tumor is indicated, so is metastasis (r) if it is present.

References


This article should be referenced as such: