T1:102

The Molecular Biology of Neoplasms

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The underlying basis of all neoplasms is a molecular-genetic abnormality that affects the basic cell cycle regulatory mechanism. At a molecular level many sarcomas may be characterized on the basis of their specific molecular aberrations – these include somatic mutations, intergene deletions, gene amplifications, and translocations. Characterization of these tumors based on this signature is expected to improve diagnostic capabilities and provide important predictive and prognostic information.

The cell-cycle related changes that arise as a result of these molecular-genetric aberrations not only explain the patho-physiological changes that arise, but may represent opprtunities for specific and targeted therapies.

Molecular markers may help to identify subsets of patient populations that are likley to benefit from a selecton of therapeutic choices.

In this presentation we attempt to synthesize currently available knolwedge in the context of the altered molecular signaling mechanisms at the cell cycle level that present novel and significant opportunities for understanding the prognosis, treatment choices for sarcomas.