Updates of molecular testing in the diagnosis and monitoring of myeloid neoplasms

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Myelodysplastic syndromes (MDS) are a group of clonal hematopoietic stem cell disorders characterized by ineffective hematopoiesis, cytopenia, and morphologic evidence of dysplasia. Myeloproliferative neoplasms (MPN) are a group of hematopoietic neoplasms characterized by proliferation of at least one hematopoietic lineage, with minimal defects in maturation. Both entities have recurrent molecular genetic abnormalities and increased risk of transformation to acute myeloid leukemias (AML). The emergence of next-generation sequencing (NGS) technique has expanded the genetic landscape of MPN, MDS, and AML, and has revealed novel somatic mutations in genes that regulate mRNA splicing, DNA methylation, histone modification, transcription, and signal transduction with roles in leukemogenesis and disease progression. We share our experience using molecular testing in the diagnosis and disease monitoring of patients with myeloid neoplasms.

Biography

C. Cameron Yin is a tenured professor in the Department of Hematopathology at the University of Texas MD Anderson Cancer Center and UT Graduate School of Biomedical Sciences. She is board certified by the American Board of Pathology in Anatomic Pathology, Clinical Pathology, Hematology, and Molecular Genetic Pathology. In addition to clinical responsibilities on the Leukemia, Lymphoma, and Molecular Diagnostic services, Dr. Yin has been actively participating in multiple research projects in the molecular genetic abnormalities of leukemia and lymphoma, which has led to nearly 200 research papers and 30 book chapters.

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