Lymphoma – What is the role of diagnostic testing/cytogenetics in 2016?

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TRANSCRIPT

Hi, I am Andrew Zelenetz, tenured physician in the lymphoma service of Memorial Sloan Kettering Cancer Center. I'm happy today to talk about chronic lymphocytic leukemia and I'd like to touch on a few aspects. First, I'd like to touch on the role of diagnostic testing. The establishment of the diagnosis of CLL is relatively easy, generally now performed through flow cytometry on the peripheral blood. Many times a bone marrow biopsy is unnecessary, and only in rare circumstance do we do a lymph node biopsy if the peripheral blood flow cytometry is not diagnostic.

But one of the questions that arise is: what is the role for additional testing? Many patients come in and have heard about IGHV testing, or FISH, or cytogenetics, but they don't know what this is all about. The FISH test is a means of looking at the different chromosomes in a very specific way. We look for abnormalities of chromosomes that are characteristically associated with CLL, such as deletion of chromosome 13 or 11, deletion of chromosome 17 or trisomy chromosome 12. If there's any residual uncertainty about the diagnosis, we sometimes do additional FISH tests to look for translocation between the immunoglobulin locus and a gene called cyclin d1, just to be certain the diagnosis isn't mantle cell lymphoma. But in a patient who has no symptoms and is feeling well, I don't feel that there's a role for FISH testing at diagnosis if the diagnosis has been established.

Another test that's frequently done is the immunoglobulin heavy chain mutation testing, or IGHV mutation testing. This is used to help us understand an important aspect of prognosis. Those patients who have unmutated immunoglobulin genes have a poor prognosis, and those patients who have a mutated immunoglobulin gene have a much more favorable prognosis. However, for the first time we feel that this information is

important when treatment decisions are made. So both FISH and IGHV mutation testing should be performed prior to the initiation of treatment because the results will influence our choice of treatment.

A young patient with an IGHV mutation should probably receive fludarabine cyclophosamide and rituximab as their treatment, because there is a potential for a curative outcome. However, if there are FISH abnormalities, particularly the deletion of chromosome 17p, that clearly drives our treatment choice. These FISH abnormalities can change during the course of treatment, and therefore what happens is the FISH test needs to be repeated prior to any line of treatment, because again it will influence our treatment choice.