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## How likely is it for patients with MDS to transform to AML?

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Hello, I'm Dr. Jae Park. Today, I would like to discuss how likely it is for patients with MDS to transform to AML. Before we discuss the topic, I do think it's important to remember the distinction between MDS and AML is somewhat arbitrary. It is based on the bone marrow blast percentage of 20% or less: 20% or less becoming MDS and if you have a 20% or more, it becomes AML. Also, it is important to recognize the primary reason for death in MDS patients is due to consequences of bone marrow failure, and not necessarily because of AML transformation. Having said that, the risk of transformation to AML is always something that patients with MDS fear, and as leukemia doctors, that we always monitor for. The risk depends on some prognostic markers. There are several prognostic scoring systems that exist for MDS patients. A commonly used one is IPSS, or International Prognostic Scoring System. Another one is the WPSS, WHO-based Prognostic Scoring System. Then the third one is the MD Anderson-based scoring system. Even though there are strengths and weaknesses of each scoring system, IPSS is the most widely used prognostic indicator for MDS. All these prognostic scoring systems incorporate percentages of blasts in the bone marrow, karyotypes (some are risk factors such as intermediate-risk karyotype or high-risk cytogenetic abnormalities), and the presence or severity of cytopenias. Using the IPSS revised system, which is called IPSS-R, median time until 25% of the MDS population developed AML is greater than 14 years for very low-risk, by 11% for low-risk patients, 3% for intermediate, 1.4% for high-risk, and 0.7% for very high-risk patients. By using the WPSS, WHO-based Scoring System, the very low-risk group will have about 3% risk of MDS to AML transformation. The low-risk group will have a 14% transformation rate. Intermediate risk will have about 33%, and high-risk 54%. In the very high-risk groups, they will have about 84% chance of AML transformation. Although we do pay a lot of attention to MDS transformation to AML because the treatment approach is slightly different (treatment options for these patients also do differ as well as clinical trial eligibility), it is also important to recognize other prognostic factors in determining the proper treatment for these patients such as their age; the goals of care, whether we are going through curative therapy versus palliative therapy; their performance status; and other molecular studies such as TP53 mutational abnormalities or TET2 mutations that may carry a more prognostic indicator that may also affect the decision to go to bone marrow transplant or not. Thank you for viewing this activity.