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EPIDEMIOLOGY

TRIGGERING A BAD STIMULATION

Patients treated with chemotherapy for other cancers have a higher risk than the general population for developing myelodysplastic syndromes (MDS) and acute myeloid leukemia (AML). In addition, those with MDS are also at an increased risk of AML. Approximately 85–90% of AML patients older than 60 years die of their disease. While patients with AML often have severe infections, data evaluating whether previous infections have a causative role for developing AML are limited. Sigurdur Kristinsson and collaborators now show that chronic immune stimulation might act as a trigger for AML or MDS.

The researchers assessed data from a Swedish population-based registry of 9,219 patients with AML, 1,662 patients with MDS and 42,878 matched controls. A history of any infectious disease was associated with a significantly increased risk of developing AML or MDS. The researchers note, "for the first time, in a population-based setting with more than 9,000 patients with AML and more than 1,500 patients with MDS … we found a personal history of any infection as well as a broad range of specific infections to increase the risk of both AML and MDS." A significant risk of AML and MDS was also observed in patients with a history of autoimmune disease.

Although the mechanisms for an increased risk for AML and MDS are unclear, underlying immune dysfunction might predispose patients to AML and/or MDS. It might be possible that infectious and autoimmune conditions are premalignant manifestations caused by immune disruption and that infection and autoimmunity might be markers of an early leukemogenic process. Alternatively, treatments for patients with autoimmune disease might increase the risk of AML and MDS. Future work is needed to understand the underlying biological mechanisms of these results.

Lisa Hutchinson

Original article Kristinsson, S.Y. *et al*. Chronic immune stimulation might act as a trigger for the development of acute myeloid leukemia or myelodysplastic syndromes. *J. Clin. Oncol*. doi:10.1200/JCO.2011.34.8540