

## Living with chronic lymphocytic leukemia

Richard Béliveau

Translated from *Le Journal de Montréal*, October 25th, 2021

*Chronic lymphoid leukemia (CLL) is the most common type of leukemia in North America, with an incidence of 5 cases per 100,000 people. It is mainly a leukemia affecting adults, with an average age at diagnosis of 72 years (1). Although it remains incurable, this cancer usually progresses very slowly and, in many cases, becomes a chronic condition that does not compromise patient survival.*

The causes responsible for CLL are unknown, but genetic factors play an important role: the incidence of this leukemia is much lower in individuals of Asian, African, and Caribbean descent (and is not increased as a result of migration of these populations to America) and familial forms of the disease, transmitted by heredity, have been described.

### ABNORMAL LYMPHOCYTES

All leukemias are cancers caused by an excessive production of immature or abnormal white blood cells which eventually suppress the production of normal blood cells.

In the case of CLL, the cancer results from abnormalities (deletion, duplication) affecting certain chromosomes of the stem cells giving rise to B lymphocytes.

Clinically, this transformation is manifested by an accumulation in the blood of abnormal B lymphocytes, exhibiting abnormalities on their surface (presence of CD5+ and CD23+ markers, among others) which compromise their immune function.

In more advanced stages of the disease, this increase in lymphocytes (lymphocytosis) may be accompanied by an increase in the size of the lymph nodes, spleen and liver as well as anemia, a decrease in platelets (thrombocytopenia) and decreased neutrophils (neutropenia).

### SLOW PROGRESSION

This form of leukemia is said to be chronic because it develops very slowly most of the time and can remain stable for several years without requiring treatment.

In fact, CLL often progresses asymptotically, and it is common for cancer to be diagnosed by chance, during a routine blood test.

In this type of early-stage CLL (Stage 0 in Rai's classification or Stage A in Binet's classification), the number of lymphocytes in the blood is too high, but the amounts of the other types of blood cells are normal (or just below normal).

In this case, one usually chooses not to treat the cancer and instead to carefully monitor its progress: unlike acute leukemias, CLL at this early stage does not represent a medical emergency.



More than half of patients are still alive for 10 years and sometimes much longer after diagnosis, with many of them never even needing treatment.

In addition, since CLL predominantly affects the elderly, many patients may die from diseases other than their leukemia in the years following diagnosis.

### CHRONIC ILLNESS

CLL is therefore a very special cancer, as it is in most cases a chronic disease with which patients must learn to live during the last years of their life.

Effective treatments have been developed in recent years to improve survival in the event of disease progression, but the ideal goal is obviously to keep this cancer in a steady state for as long as possible, without too much danger to health.

In this sense, it has been known for several years that the microenvironment in which cancer cells evolve plays an important role in this progression, and it seems that this is also the case for CLL (2).

Chronic inflammation, the formation of new blood vessels by the process of angiogenesis, and the development of resistance to elimination by immune cells are all factors that contribute to the progression of cancers, including CLL.

For patients with the disease at an early stage, it may therefore be advantageous to adopt lifestyle habits that minimize the impact of these factors on the tumor microenvironment.

A diet rich in plants and devoid of ultra-processed industrial foods, regular physical exercise and the maintenance of a normal body weight are all factors that promote the establishment of an anti-inflammatory and anti-angiogenic condition that can deprive cancer cells of an essential tool for their growth and help maintain CLL in a latent state.

- (1) Hallek M et al. Chronic lymphocytic leukaemia. *Lancet* 2018 ; 391 : 1524-1537.
- (2) Burger JA and JG Gribben. The microenvironment in chronic lymphocytic leukemia (CLL) and other B cell malignancies: insight into disease biology and new targeted therapies. *Semin. Cancer Biol.* 2014 ; 24 : 71-81