The CLL Bloodline

March 2020

Over the course of a year of monthly meetings, ***The CLL Society Bloodline*** will teach the BASICS needed to understand CLL. It will also provide news, help with the acronyms and new vocabulary words, and offer simple fun quizzes. The cycle restarts and it updated annually.

MONTHLY QUIZ: Having deletion 17p confirms a poor prognosis. Choose all that are correct about this prognostic marker.

1. It is detected by "FISH" testing.
2. It refers to missing the short arm of the 17th chromosome that should contain the important anti- cancer gene, TP53.
3. It associated with resistant to traditional chemotherapy, but less so with most novel agents.
4. It interferes with the cells ability to commit suicide even when it is badly damaged.
5. It can lead to increased genetic instability.
6. It is common at time of diagnosis but becomes rarer as the CLL progresses.

Answer: All are true, but the last. Deletion 17p (del 17p) is detected by a fancy prognostic test called FISH testing (fluorescent in-situ hybridization) that probes the inside of the cells to look for missing or even extra genetic material. The short or the **p**etit arm of the 17th chromosome contains P53, a potent anti-cancer gene that has been called the guardian of the genome. P53 tries to repair damaged DNA and if it can't repair the damage, it starts the process for the cell to die. Without P53, cells damaged by chemotherapy are not killed, but instead continue to reproduce and may become even more mutant and resistant to therapy. Del 17p is only detectable in 5% of patients at diagnosis but is found in 30% or more at time of relapse. It can also develop without treatment. That is why we recommend FISH testing before starting any therapy, as traditional chemo will not be helpful for patients with del 17p. **TEST BEFORE TREAT™** is our mantra at the CLL Society.

THE BASICS: When is treatment needed?

The decision to start treatment should never be based on blood counts alone, but by looking at the whole patient. Consider initiating therapy when there is the presence of:

1. B Symptoms
   - Weight loss >10% of body weight in previous 6 months.
   - Severe fatigue *(ambulatory and capable of all self-care but unable to carry out any work activities.*
   - Fevers >38°C for at least 2 weeks without evidence of infection.
   - Drenching night sweats for more than a month without evidence of infection.
2. Evidence of progressive bone marrow failure manifest by low blood counts (cytopenias) including anemia (low red blood cells) or thrombocytopenia (low platelets).
3. Massive or symptomatic splenomegaly (enlarged spleen).
4. Massive or symptomatic lymph nodes or clusters of nodes (>10 cm).
5. Autoimmune Hemolytic Anemia (AIHA: body attacks its own red cells) and/or Immune Thrombocytopenic Purpura (ITP: body attacks its own platelets) that is unresponsive to steroids or other standard therapy.
6. Rising ALC with an increase of more than 50% over a 2-month period or a lymphocyte doubling time (LDT) <6 months. If ALC is <30,000, LDT should not be used as the only criterion for beginning to treat.

See http://cllsociety.org/2016/03/cll-watch-wait-start-treatment/ for more discussion of this important topic and the related subject of watch and wait.

WORD/ACRONYM OF THE MONTH: Tumor Lysis Syndrome (TLS)

Tumor Lysis Syndrome (TLS) is a complication of treatment caused by the rapid killing of the cancer cells that can results in dangerous blood abnormalities including high uric acid and potassium that can lead to fatal heart and kidney issues. It may occur with both oral meds such as venetoclax and IV treatments when the leukemia cells are lysed (killed) too fast and spill out their inner contents into the blood stream, overwhelming the body's ability to cope.

If the nonprofit 501c3 CLL Society has helped you or a loved one, please consider making a tax-deductible donation.