Written By: Tammy McClellan, PharmD
Riverside Healthcare

# Positive Quality Intervention: Patient Screening for Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma

**Description:** The purpose of this PQI is to assess the individualized characteristics of the Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma (CLL/SLL) patient and important screening measures in order to achieve optimal pharmacological therapy.

**Background:** CLL/SLL, a type of non-Hodgkin Lymphoma, is an indolent cancer in which immature lymphocytes (primarily B lymphocytes) are found in the blood and bone marrow and/or in the lymph nodes. CLL and SLL are the same disease, but in CLL cancer cells are found mostly in the blood and bone marrow.[1] In SLL cancer cells are found mostly in the lymph nodes.[2] CLL/SLL has been described as a disease of defective mechanisms of apoptosis and not hyper-proliferation. CLL/SLL is considered both a lymphoma and leukemia. There are multiple screening tests (ex. FISH, IgHV, TP53) that will help provide insight to an informed course of action. Predictive testing is important to provide an informed decision regarding therapy selection within CLL/SLL. When pharmacological therapy is warranted, the healthcare professional can now proceed in making a selection of the most appropriate therapies. In addition, testing for minimal residual disease (MRD) can be utilized to determine depth of response along with detection of disease relapse.[3]

**PQI Process:** General Screening Guide (visit cllsociety.org for more in-depth information)[1]

- For CLL, review B-lymphocyte count at ≥5,000 monoclonal (genetically identical) B-lymphocytes in the blood for the duration of at least three months and confirm utilizing flow cytometry
- For SLL confirm documented location of enlarged lymph nodes and/or an enlarged spleen with < 5,000 B-lymphocytes in the blood and confirm with lymph node biopsy
- Secondary 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 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
- Confirmatory tests to discuss with care team to determine course of action after screening[4]
    - FISH (interphase fluorescence in situ hybridization) test for genetic abnormalities
        - Test before every treatment
        - An abnormality such as deletion 17p can affect response to chemotherapy
    - IgHV mutation status
        - Test mutation status before the first treatment
        - Patients with a “mutated” IgHV immunoglobulin will respond with FCR based therapies
    - TP53 genetic testing
        - Test before every treatment
        - A TP53 mutation can affect response to chemotherapy
    - Additional MRD testing as needed
        - Polymerase Chain Reaction laboratory test (PCR)
        - Flow cytometry
        - Next Generation Sequencing

- Patient considerations
    - Patient's age - 64 years old or younger & 65 years old or older
    - Presence of Comorbidities/Performance Status
- Genetic abnormalities[5]
    - Deletion 17p
    - Deletion 13q
    - Deletion 11q
    - TP53 mutation
    - Complex karyotype
- Tumor burden/Risk for Tumor Lysis syndrome[6]
    - Review physical exam notes: presence of "bulky disease"
    - Laboratory values: increased potassium, uric acid, phosphorous, LDH, and decreased calcium, renal dysfunction
    - Clinical abnormalities: arrhythmias, seizures, muscle cramps and weakness
    - Drug selection examples: allopurinol, febuxostat, rasburicase
        - **Use of Rasburicase (Elitek®) for Treatment of Tumor Lysis Syndrome**
    - Note to provide rigorous hydration
- Prophylactic measures:[7]
    - Cytomegalovirus (CMV): Consider use of ganciclovir
        - Patients at higher risk are those receiving idelalisib, alemtuzumab, fludarabine-based chemotherapy and some small-molecule inhibitors
    - Herpes virus: Consider providing acyclovir or equivalent
    - Pneumocystis Jirovecii Pneumonia (PJP): Prophylaxis with sulfamethoxazole/trimethoprim or equivalent
    - Hepatitis B virus (HBV): Hepatitis B surface antigen and Hepatitis B core antibody testing

**Patient-Centered Activities:**

- Provide Oral Chemotherapy Education (OCE) Sheet (as applicable)
- CLL/SLL patients are at a higher risk for developing non-melanomatous skin cancer (annual dermatologic skin screening is recommended in addition to other screenings)
- Irradiate all blood products to avoid transfusion-associated graft-versus-host disease (GVHD)
- Counsel patient on disease state, treatment regimen, what to expect, upcoming appointments/toxicology checks and adherence

## References:


1. CLL Society. Diagnosis of Chronic Lymphocytic Leukemia. Accessed at: https://cllsociety.org/cll-101/test-before-treat/.
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4. CLL Society. Test Before Treat. Accessed at: https://cllsociety.org/cll-101/test-before-treat/.
5. National Institutes of Health (NIH): National Library of Medicine. Cytogenetic Abnormalities in Chronic Lymphocytic Leukemia. Accessed at: https://pubmed.ncbi.nlm.nih.gov/11347338/.
6. Gupta, Arjun MD & Moore, Joseph A. MD. Tumor Lysis Syndrome [published online May 10, 2018]. JAMA Oncology. Doi:10.1001/jamaoncol.2018.0613. Accessed at: https://jamanetwork.com/journals/jamaoncology/fullarticle/2680750.
7. National Comprehensive Cancer Network (NCCN). NCCN Guidelines Version 4.2020-Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma. Accessed at: https://www.nccn.org/professionals/physician_gls/pdf/cll.pdf.