BC Cancer Protocol Summary for Palliative Therapy For Lymphoma Using Radioimmunotherapy: riTUXimab-Priming for ^{90}Y-Ibritumomab Tiuxetan (ZEVALIN®)

Protocol Code *LYRITZ*

Tumour Group *Lymphoma*

Contact Physicians *Dr. Andrea Lo*
Dr. Laurie Sehn

ELIGIBILITY:

Relapsed indolent lymphoma including
- Follicular
- Small lymphocytic
- Lymphoplasmacytic
- Marginal Zone
- Transformed lymphoma arising from one of the above indolent histologies (excluding CLL (Richter Transformation), where radioimmunotherapy appears ineffective.)

Meeting the following conditions:
1. third line treatment and
2. less than 25% marrow involvement and
3. less than 25% of the marrow previously irradiated and
4. Platelet count greater than 100 x 10^9/L

Radiation Oncology consultation. The Radiation Oncologist is responsible for determining eligibility, prescribing the riTUXimab and making arrangements with Nuclear Medicine for the radioisotope administration, and for post-therapy haematological monitoring.

All patients will be treated at the BC Cancer Vancouver Cancer Centre only.

EXCLUSIONS:
- Non-CD20 lymphoma or
- greater than or equal to 25% marrow involvement or
- greater than or equal to 25% of the marrow previously irradiated or
- Platelet count less than 100 x 10^9/L

TESTS:
- Bone Marrow biopsy if not recently available, HBsAg, HBsAb, and HBcoreAb
- Before Day 1: CBC & Diff, total bilirubin, ALT, creatinine
- Recommended post Day 9: CBC & Diff for 12 weeks or until counts recover
- If clinically indicated: HBV viral load (see protocol SCHBV)

PREMEDICATIONS:
- acetaminophen 650 to 975mg PO pre-treatment and 4 hours after beginning riTUXimab.
- diphenhydrAMINE 50 mg PO pre-treatment and 4 hours after beginning riTUXimab.

SUPPORTIVE MEDICATIONS:

- Very high risk of hepatitis B reactivation. If HBsAg or HBcoreAb positive, follow hepatitis B prophylaxis as per SCHBV.

TREATMENT:

- Patients receive riTUXimab on two occasions (Day 1 and then on ONE of Day 7 or Day 8 or Day 9). The second pre-therapy infusion (i.e., on Day 7 or Day 8 or Day 9) is immediately followed by the active radioimmunoconjugate in the Nuclear Medicine department.

Drug	Dose	BC Cancer Administration Guideline
riTUXimab	250 mg/m² x 2 doses, Day 1 and Day 9 (approximately one week apart) Saline lock IV for transfer to Nuclear Medicine Dept	IV in 250 mL NS (to maintain concentration range between 1 to 4 mg/mL) over 2 to 8 hours* *Start at 50 mg/h. After 1 hour, increase rate by 50 mg/h every 30 minutes until rate = 400 mg/h unless toxicity occurs. *or* Start at 25mg/h (strongly advised for patients with detectable circulating lymphoma cells) For Day 9 dose, if no adverse event seen with previous infusion, start at 100 mg/h. Increase rate by 100 mg/h every 30 minutes until rate = 400 mg/h unless toxicity occurs.
^{90}Y-ibritumomab tiuxetan (ZEVALIN®)	This agent will be administered in the Nuclear Medicine Department. Co-ordination of timing of prior riTUXimab administration is essential, as the RIT must be given immediately after the riTUXimab.	

*****The risk of cytokine release syndrome is low but is increased when the peripheral blood lymphocyte count is greater than 30 to 50 x 10^9 /L. While there is no requirement to withhold riTUXimab based on lymphocyte count, clinicians may wish to pre-medicate patients with high tumour burden with steroids prior to riTUXimab infusion or omit the riTUXimab from the first cycle of treatment.

DOSE MODIFICATIONS:

1. Dose modifications are not made for riTUXimab. RIT doses are determined by Nuclear Medicine.

PRECAUTIONS:

1. **Hypersensitivity**: riTUXimab can cause allergic type reactions during the IV infusion such as hypotension, wheezing, rash, flushing, alarm, pruritus, sneezing, cough, fever or faintness. Patients are to be under constant visual observation during all dose increases and for 30 minutes after infusion completed. Vital signs are not required unless symptomatic. Because transient hypotension may occur during infusion, consider withholding antihypertensive medications 12 hours prior to riTUXimab infusion. If an allergic reaction occurs, stop the infusion and the physician in charge should determine a safe time and rate to resume the infusion. A reasonable guideline is as follows. After recovery of symptoms, restart riTUXimab infusion at one infusion rate below the rate at which the reaction occurred and continue with escalation of infusion rates on the appropriate schedule above. If the infusion must be stopped a second time, restart after clearance of symptoms, at one infusion rate lower and continue at that rate without further escalation. Fatal cytokine release syndrome can occur (see below). See BC Cancer Hypersensitivity Guidelines.
2. **Fatal Cytokine Release Syndrome** has been reported. It usually occurs within 1 to 2 hours of initiating the first infusion. Initially, it is characterized by severe dyspnea (often with bronchospasm and hypoxia) in addition to fever, chills, rigors, urticaria and angioedema. Pulmonary interstitial infiltrates or edema visible on chest x-ray may accompany acute respiratory failure. There

may be features of tumour lysis syndrome such as hyperuricemia, hypocalcemia, acute renal failure and elevated LDH. For severe reactions, stop the infusion immediately and evaluate for tumour lysis syndrome and pulmonary infiltration. Aggressive symptomatic treatment is required. The infusion can be resumed at no more than one-half the previous rate once all symptoms have resolved, and laboratory values and chest x-ray findings have normalized. The risk of cytokine release syndrome is low but is increased when the peripheral blood lymphocyte count is greater than 30 to 50 x 10^9 /L. While there is no requirement to withhold riTUXimab based on lymphocyte count, clinicians may wish to pre-medicate patients with high tumour burden with steroids prior to riTUXimab infusion or omit the riTUXimab from the first cycle of treatment.

3. **Neutropenia**: Fever or other evidence of infection must be assessed promptly and treated aggressively.
4. **Rare Severe Mucocutaneous Reactions**: (similar to Stevens-Johnson Syndrome) have been anecdotally reported. If such a reaction occurs, riTUXimab should be discontinued.
   Hepatitis B Reactivation: See SCHBV protocol for more details.

Contact Dr. Andrea Lo at (604) 877-2730 or 1-800-663-3333 with any problems or questions regarding this treatment program.