

Radiopharmaceutical Therapy: Agent/Protocol-Specific Procedure Ibritumomab tiuxetan (Zevalin®) for Clinical Use

Radiopharmaceutical Agent:	Ibritumomab tiuxetan (Zevalin®) Ibritumomab is a murine anti-CD20 monoclonal antibody; it is covalently-bound to the linker-chelator tiuxetan to form ibritumomab tiuxetan. This compound is chelated (via tiuxetan) to yttrium-90 (Y-90) for radioimmunotherapy of B-cell non-Hodgkin's lymphoma; indium-111 (In-111)-labeled ibritumomab tiuxetan is used for imaging in this regimen
Drug Information Source:	FDA approved for relapsed CD20+ B cell Non-Hodgkin's lymphoma. For additional information regarding this agent, consult MicroMedex or other standard references
Applicability of Worksheet:	Clinical use of commercial product; standard of care
Target Patient Process:	Patients with appropriate histology lymphoma will be evaluated by their treating hematologist/oncologist for eligibility. The major eligibility criteria include: <ul style="list-style-type: none">• B cell NHL• Overall bone marrow cellularity of > 15%• Bone marrow space less < 25% involved by lymphoma• Platelet count > 100,000cells/mm³ Bone marrow biopsy will be performed within 42 days of In-111-ibritumomab tiuxetan administration Platelet count will be performed within 28 days of In-111-ibritumomab tiuxetan administration
Administration/Treatment Schedule:	Overview: In relapsed or refractory B-cell non-Hodgkin's lymphoma, intravenous Rituximab is given initially (to clear peripheral B-cells and improve biodistribution of ibritumomab tiuxetan) and within 4 hours, intravenous In-111-ibritumomab tiuxetan is administered. Biodistribution data are collected via a scan done between 48-72 hours post injection. Ideally, In-111-ibritumomab tiuxetan is injected on Tuesday, with scanning being performed on Thursday. Images will be interpreted prior to the patient leaving the Nuclear Medicine department. If images are indeterminant , scanning may be repeated 24 hours later (on Friday). If the Authorized Physician finds the biodistribution data to be acceptable , 7 days after In-111-ibritumomab tiuxetan injection, another rituximab dose is administered and within 4 hours, intravenous Y-90-ibritumomab tiuxetan. If the Authorized Physician finds the biodistribution data to be unacceptable, they will discuss the results with the referring physician and if necessary, cancel the Y-90-ibritumomab tiuxetan treatment and notify the Nuclear Pharmacy staff. In-111-ibritumomab tiuxetan: Administered via IV infusion or IV push over 10 minutes in a pre-established free flowing intravenous line, utilizing a 0.22micron low protein-binding filter in-line between the syringe and infusion port. Line should be flushed with at least 20mL normal saline after the completion of the infusion. Immediately terminate the infusion and restart in another vein, if signs or symptoms of extravasation occur. Y-90-ibritumomab tiuxetan: Administered via IV infusion or IV push over 10 minutes in a pre-established free flowing intravenous line, utilizing a 0.22micron low protein binding filter in-line between the syringe and infusion port. Line should be flushed with at least 20mL normal saline after the completion of the infusion. Immediately terminate the infusion and restart in another vein, if signs or symptoms of extravasation occur. Syringe will be reassayed and documented on the

computer generated prescription after administration to ensure the entire dose was received by the patient.

Dose Range:

In-111-ibritumomab tiuxetan:

5 millicuries (1.6 mg) for each patient (+/- 20% = 4-6 millicuries)

Y-90-ibritumomab tiuxetan:

0.4 millicuries/kg (+/- 10%) (2.08 mg) for platelet counts \geq 150,000 cells/mm³

0.3 millicuries/kg (+/- 10%) (2.08 mg) for platelet count 100,000-149,000 cells/mm³

Should not be administered to patients with platelet counts < 100,000 cells/mm³.

MAXIMUM DOSE FOR ALL PATIENTS IS 32 (+/- 10%) MILLICURIES

Scheduling Procedures:

Approved, pre-printed physicians orders will be completed by the referring physician. Order sets will include the patient weight, platelet count, and planned Y-90-ibritumomab tiuxetan dose. Hematology/Oncology staff will hand deliver the completed physician order set to the designated slot in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389). If not completed, the lead technologist will stamp "for scheduling only" on the form. Hematology/Oncology staff will call Nuclear Medicine staff to determine treatment dates, then place the Nuclear Medicine order via computer. Week 1 is entered under "tumor detection whole body". Week 2 is entered under "non-thyroid therapy". Nuclear Medicine Schedulers will hand deliver the Nuclear Medicine Face Sheets and Medication Records that print out to the designated slots in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389). Lead Nuclear Medicine Technologist will hand deliver the physician order sets, Nuclear Medicine Face Sheets and Medication Records to the Nuclear Medicine physician who will be treating the patient on the Y-90-ibritumomab tiuxetan administration day. If the treating physician is unavailable, they will be forwarded to the faculty physician of that day. Upon approval, the written directive will be prepared. The approving physician will forward it, along with the physician order sets, Nuclear Medicine Face Sheets, and Medication Records to the Nuclear Pharmacy staff for processing. The Nuclear Pharmacist will verify and initial the written directive, prepare the Radiopharmaceutical Requisition Form, and order the doses. After the doses are ordered, Nuclear Pharmacy staff will return the physician order sets, Nuclear Medicine Face Sheets, Medication Records, and written directive to the designated slots in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389). Radiopharmaceutical Requisition Form will remain in the Nuclear Pharmacy. 48 hours prior to appointment dates, the Nuclear Medicine Order Forms will print. Nuclear Medicine Schedulers will place the Nuclear Medicine Order Forms with the physician order sets, Nuclear Medicine Face Sheets, Medication Records, and written directive in the designated slots in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389).

Written Directive and Validation:

Authorized User will determine the appropriateness of the referring physician order and complete the written directive as instructed on the **Radiopharmaceutical Therapy Dose Documentation Form**; no additional procedures required

Drug Procurement/Preparation:

Upon receipt of written directive, Nuclear Pharmacy staff will order unit doses via phone/FAX from:

Cardinal Health
153 East Badger Road
Madison, WI 53713
608-270-2670
FAX 608-270-3572

Nuclear Pharmacy staff will place the order for the In-111-ibritumomab tiuxetan dose via phone. Order for Y-90-ibritumomab tiuxetan dose will be placed at the same time via phone, and confirmed by FAXing a copy of the written directive. Orders for both In-111-ibritumomab tiuxetan and Y-90-ibritumomab tiuxetan doses must be placed by 12:00pm CST on the Friday prior to Tuesday In-111-ibritumomab tiuxetan injection. Must give >24hour cancellation notice for the In-111-ibritumomab tiuxetan dose. For the Y-90-ibritumomab tiuxetan dose: must cancel prior to noon local time on the first Friday after the In-111-ibritumomab tiuxetan delivery.

The day prior to the Y-90-ibritumomab tiuxetan infusion, Nuclear Pharmacy staff will retrieve the written directive from the designated slot in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389) for order entry and dose preparation. It will remain in the Nuclear Pharmacy until the dose is picked up for administration. The physician order set and Nuclear Medicine Order Form will remain in the designated slot in the Lead Nuclear Medicine Technologists' Work Room (Room E1/389).

Pharmacy Product Validation:

As instructed on the **Radiopharmaceutical Therapy Dose Documentation Form**; no additional procedures required

Patient Instructions/Education Validation:

As instructed on the **Radiopharmaceutical Therapy Dose Documentation Form**; no additional procedures required

Administration Validation:

Only appropriately trained individuals may administer this product. Complete and document administration as instructed on the **Radiopharmaceutical Therapy Dose Documentation Form**.

Additional administration documentation required: initial, time and date the Medication Record as indicated. The physician order set and Medication record are to be filed with loose elements in the patient chart.

Other information/instructions:

Hematology/Oncology staff will notify Lead Nuclear Medicine Technologist at phone number 9-225-6094, or page Nuclear Pharmacist at 5-7000 pager ID 7033 upon initiation of rituximab and if any infusional delays are encountered. Patient to be sent to Nuclear Medicine via escort

REVIEWED BY: S Perlman, MD, D Fuerbringer, CMNT, S Knishka, RPh

SCOTT B. PERLMAN, MD, Chief, Nuc Med Division

DEREK E. FUERBRINGER, CMNT Radiology Tech Mngr

SCOTT P. KNISHKA, RPh, BCNP, Radiopharmacist

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