National Imaging Associates, Inc. *	
Clinical Guideline: **NON-HODGKIN'S LYMPHOMA**	**Original Date: June 2013**
Radiation Oncology	**Last Revised Date: January 2022**
Guideline Number: NIA_CG_133	**Implementation Date: January 2023**

INDICATIONS FOR RADIATION THERAPY AND TREATMENT OPTIONS:

Three-dimensional conformal radiation therapy (3D-CRT) or two-dimensional (2D) radiation therapy (2D) is the appropriate technique for treatment of Non-Hodgkin's Lymphomas. The following include radiation dose guidelines for the following lymphomas:

- Follicular lymphoma (24-30Gy, or 36Gy if bulky) up to 24 fractions[1]
- Mantle cell lymphoma (24-36Gy) up to 24 fractions[1]
- MALT lymphoma – Marginal Zone (24-30Gy) up to 20 fractions[1]
- Diffuse large B cell lymphoma (30-55Gy) up to 37 fractions[1]
- Primary cutaneous anaplastic large cell lymphoma: 24-36Gy up to 24 fractions[2]
- NK/T Lymphoma
    - primary treatment: 50-55Gy up to 31 fractions
    - combined modality: 45-50.4Gy up to 28 fractions
    - Localized chronic lymphocytic leukemia (CLL) and Small Lymphocytic Lymphoma (SLL): 24-30Gy up to 17 fractions[3]
- Palliative dose (up to 10 fractions) for symptom control

Unless otherwise indicated, standard radiation fractionation consists of 1.5Gy to 2.0Gy per day.[1]

Total Skin Electron Beam Therapy (TSEBT)[2]
A variety of techniques, using electron beam, may be utilized to cover the entire cutaneous surface.

- Dosage Guidelines:
    - 8-36Gy, 1- 2Gy per fraction, 4-5 days per week, up to 36 fractions. "Shadowed" areas may need to be supplemented with individual electron fields. Individual tumors may be boost with doses of 4-12Gy

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW

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Intensity modulated radiation therapy (IMRT)
IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for Non-Hodgkin's lymphoma. IMRT is strictly defined by the utilization of inverse planning modulation techniques. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity, or tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created.

Clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of patient-specific dose volume histograms and isodose plans.

- Provide tissue constraints for both the target and affected critical structures.

Stereotactic Body Radiation Therapy
Stereotactic Body Radiation Therapy (SBRT) is not currently a routine treatment option for the treatment of Hodgkin's lymphoma. SBRT may be appropriate for patients with tumors arising in or near a previously irradiated region to minimize risk to surrounding normal tissues.[4] If requested, this would require peer to peer review to determine medical necessity.

Proton Beam Radiation Therapy
Proton beam is not an approved treatment option for Non-Hodgkin's Lymphoma. Proton beam has not been proven superior treatment to conventional radiation therapy.

THE FOLLOWING APPLIES TO CMS (MEDICARE) MEMBERS ONLY:
For Proton Beam and Stereotactic Radiotherapy, refer to Local Coverage Determination (LCD), if applicable.

BACKGROUND
The incidence of non-Hodgkin's lymphomas has increased substantially over the past few decades due to age-related disease. The majority of non-Hodgkin's lymphoma originates in B-lymphocytes (80-85%) with T-lymphocytes comprising 15-20%. Natural killer cell lymphomas are very rare. The classification of non-Hodgkin's lymphoma is based on the cell of origin (large B, large T, or large NK), precursor or mature lymphocytes, as well as genetic, immunophenotype, and clinical features. Radiation therapy is typically delivered to the involved field either alone or in consolidation following chemotherapy. CT-based simulation and 3-dimensional planning is typically advised.

The use of intensity modulated radiation therapy, as well as stereotactic body radiotherapy would be unusual. If requested, this would require peer to peer review to determine medical necessity. For

nodal sites, radiation therapy alone or consolidation following chemotherapy should treat the involved field in most cases. Regional/ extended fields are typically not recommended.

POLICY HISTORY

Date	Summary
January 2022	Added Total Skin Electron Beam Therapy (TSEBT) along with dosage guidelines
February 2021	Deleted: Stereotactic Body Radiation Therapy (SBRT) is not currently an approved treatment option for the treatment of Non-Hodgkin's Lymphoma. Recent studies comparing SBRT conventional radiation therapy are limited. Added: Stereotactic Body Radiation Therapy (SBRT) is not currently a routine treatment option for the treatment of Hodgkin's lymphoma. SBRT may be appropriate for patients with tumors arising in or near a previously irradiated region to minimize risk to surrounding normal tissues. (ASTRO 2014). If requested, this would require peer to peer review to determine medical necessity.
February 2020	References updated
February 2019	Added and updated references

REFERENCES

1. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): B-Cell Lymphomas Version 5.2021. National Comprehensive Cancer Network (NCCN). Updated September 22, 2021. Accessed December 9, 2021. https://www.nccn.org/professionals/physician_gls/pdf/b-cell.pdf
2. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): T-Cell Lymphomas Version 1.2021. National Comprehensive Cancer Network (NCCN). Updated October 5, 2020. Accessed December 8, 2021. https://www.nccn.org/professionals/physician_gls/pdf/t-cell.pdf
3. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma Version 1.2022. National Comprehensive Cancer Network (NCCN). Updated September 8, 2021. Accessed December 9, 2021. https://www.nccn.org/professionals/physician_gls/pdf/cll.pdf
4. American Society for Radiation Oncology. Model Policies: Stereotactic Body Radiation Therapy. American Society for Radiation Oncology (ASTRO). Updated June 2020. Accessed December 7, 2021. https://www.astro.org/ASTRO/media/ASTRO/Daily%20Practice/PDFs/ASTROSBRTModelPolicy.pdf

ADDITIONAL RESOURCES

1. American College of Radiology. ACR Appropriateness Criteria®: Diffuse Large B Cell Lymphoma. Updated 2014. Accessed October 20, 2021. https://acsearch.acr.org/docs/3091906/Narrative
2. American College of Radiology. ACR Appropriateness Criteria®: Localized Nodal Indolent Lymphoma. Updated 2013. Accessed October 20, 2021. https://acsearch.acr.org/docs/3082846/Narrative
3. Bentzen SM, Constine LS, Deasy JO, et al. Quantitative Analyses of Normal Tissue Effects in the Clinic (QUANTEC): an introduction to the scientific issues. *Int J Radiat Oncol Biol Phys*. Mar 1 2010;76(3 Suppl):S3-9. doi:10.1016/j.ijrobp.2009.09.040
4. Campbell BA, Voss N, Woods R, et al. Long-term outcomes for patients with limited stage follicular lymphoma: involved regional radiotherapy versus involved node radiotherapy. *Cancer*. Aug 15 2010;116(16):3797-806. doi:10.1002/cncr.25117
5. De Sanctis V, Finolezzi E, Osti MF, et al. MACOP-B and involved-field radiotherapy is an effective and safe therapy for primary mediastinal large B cell lymphoma. *Int J Radiat Oncol Biol Phys*. Nov 15 2008;72(4):1154-60. doi:10.1016/j.ijrobp.2008.02.036
6. Goda JS, Gospodarowicz M, Pintilie M, et al. Long-term outcome in localized extranodal mucosa-associated lymphoid tissue lymphomas treated with radiotherapy. *Cancer*. Aug 15 2010;116(16):3815-24. doi:10.1002/cncr.25226
7. Guadagnolo BA, Li S, Neuberg D, et al. Long-term outcome and mortality trends in early-stage, Grade 1-2 follicular lymphoma treated with radiation therapy. *Int J Radiat Oncol Biol Phys*. Mar 1 2006;64(3):928-34. doi:10.1016/j.ijrobp.2005.08.010
8. Hartford AC, Palisca MG, Eichler TJ, et al. American Society for Therapeutic Radiology and Oncology (ASTRO) and American College of Radiology (ACR) Practice Guidelines for Intensity-Modulated Radiation Therapy (IMRT). *Int J Radiat Oncol Biol Phys*. Jan 1 2009;73(1):9-14. doi:10.1016/j.ijrobp.2008.04.049

9. Illidge T, Specht L, Yahalom J, et al. Modern radiation therapy for nodal non-Hodgkin lymphoma-target definition and dose guidelines from the International Lymphoma Radiation Oncology Group. *Int J Radiat Oncol Biol Phys*. May 1 2014;89(1):49-58. doi:10.1016/j.ijrobp.2014.01.006
10. Morschhauser F, Radford J, Van Hoof A, et al. Phase III trial of consolidation therapy with yttrium-90-ibritumomab tiuxetan compared with no additional therapy after first remission in advanced follicular lymphoma. *J Clin Oncol*. Nov 10 2008;26(32):5156-64. doi:10.1200/jco.2008.17.2015
11. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines): Hairy Cell Leukemia Version 1.2022. National Comprehensive Cancer Network (NCCN). Updated September 8, 2021. Accessed December 9, 2021. https://www.nccn.org/professionals/physician_gls/pdf/hairy_cell.pdf
12. Phan J, Mazloom A, Medeiros LJ, et al. Benefit of consolidative radiation therapy in patients with diffuse large B-cell lymphoma treated with R-CHOP chemotherapy. *J Clin Oncol*. Sep 20 2010;28(27):4170-6. doi:10.1200/jco.2009.27.3441
13. Siegel R, Naishadham D, Jemal A. Cancer statistics, 2012. *CA Cancer J Clin*. Jan-Feb 2012;62(1):10-29. doi:10.3322/caac.20138
14. Zinzani PL, Stefoni V, Finolezzi E, et al. Rituximab combined with MACOP-B or VACOP-B and radiation therapy in primary mediastinal large B-cell lymphoma: a retrospective study. *Clin Lymphoma Myeloma*. Oct 2009;9(5):381-5. doi:10.3816/CLM.2009.n.074

Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.