Mantle Cell Lymphoma

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson's specific patient population; MD Anderson's services and structure; and MD Anderson's clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers. This algorithm should not be used to treat pregnant women.

PATHOLOGIC DIAGNOSIS

ESSENTIAL:

- Hematopathology review of all slides with at least one tumor paraffin block. Re-biopsy if consult material is non-diagnostic.
- Adequate immunophenotype to confirm diagnosis[1]
  - Paraffin panel:
    - Pan B-cell marker (CD19, CD20, PAX5), CD3, CD5, CD10, and cyclin D1
    - Ki-67 (proliferation rate)

    or
    - Flow cytometry immunophenotyping: kappa/lambda light chains, CD5, CD10, CD19, CD20, CD23, FMC-7, CD200 and CD43

OF USE IN CERTAIN CIRCUMSTANCES:

- Molecular genetic analysis
  - FISH to detect the t(11;14)(q13;q32)/*CCND1-IgH*
  - *IgH* gene rearrangements to detect monoclonality
  - PCR to detect *CCND1-IgH*
  - TP53 mutation
  - NOTCH1 mutation
- Immunohistochemistry for SOX-11

STRONGLY RECOMMENDED:

- Fine Needle Aspiration (FNA) or core biopsy for tissue banking by protocol

INITIAL EVALUATION

ESSENTIAL:

- Physical exam: Attention to node-bearing areas, including Waldeyer's ring, size of liver and spleen, and patient's age
- Performance status
- B symptoms (fever, sweats, weight loss)
- CBC with differential, LDH, BUN, creatinine, albumin, AST, total bilirubin, alkaline phosphatase, serum calcium, uric acid
- Screening for HIV 1 and 2, hepatitis B and C (HBcAb, HBaAg, HCVAb)
- Beta- 2 microglobulin
- Chest x-ray, PA and lateral
- Bone marrow bilateral biopsy with unilateral aspirate
- CT chest, abdomen and pelvis
- CT neck
- PET/CT
- Lifestyle risk assessment[2]

OF USE IN SELECTED CASES:

- Upper GI/barium enema/endoscopy
- CT head or MRI brain
- Plain bone radiographs and bone scan
- Urine pregnancy test
- Discuss fertility preservation options and sperm banking for patients of child bearing potential
- Lumbar puncture
- Colonoscopy
- Stool guaiac

See Induction Therapy on Page 2

[1] Typical Immunophenotype: CD5+, CD20+, CD43+, CD23-/+, cyclin D1+. Note: some cases of Mantle Cell Lymphoma may be CD5-, or CD23+. If the diagnosis is suspected, cyclin D1 staining or FISH to demonstrate the t(11;14)(q13;q32) should be performed.

[2] See Physical Activity, Nutrition, and Tobacco Cessation Algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

Department of Clinical Effectiveness V5
Approved by the Executive Committee of the Medical Staff on 08/29/2017

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Note: Consider Clinical Trials as treatment options for eligible patients.

PRESENTATION

Untreated Mantle Cell Lymphoma

MIPI[1] less than or equal to 3?

Yes

Age less than or equal to 65?

Yes

- Clinical trial
- R-HCVAD/R-MA[2]
- R-CHOP[2] **and/or** radiation therapy if early Stage I or II
- R-Bendamustine **with** radiation therapy if early Stage I or II
- Observation
- Rituximab
- R-CHOP/R-DHAP[2] or R-HCVAD/R-MA[2] followed by autologous stem cell transplant

No

- Clinical trial
- Modified R-HCVAD/R-MA[2]
- R-CHOP[2] with **or** without maintenance rituximab every 2 months **and/or** radiation therapy if early Stage I or II
- R-bendamustine with **or** without maintenance rituximab every 2 months **and/or** radiation therapy if early Stage I or II
- Observation
- Rituximab

No

Age less than or equal to 65?

Yes

- Clinical trial
- R-HCVAD/R-MA[2]
- R-CHOP[2] **and/or** radiation therapy if early Stage I or II
- R-bendamustine with radiation therapy if early Stage I or II
- R-CHOP/R-DHAP[2] **or** R-HCVAD/R-MA[2] followed by autologous stem cell transplant

No

- Clinical trial
- Modified R-HCVAD[2]
- R-CHOP[2] with **or** without maintenance rituximab every 2 months **and/or** radiation therapy if early Stage I or II
- R-bendamustine with **or** without maintenance rituximab every 2 months **and/or** radiation therapy if early Stage I or II
- Rituximab

INITIAL THERAPY

FOLLOW-UP

All the following as indicated below:

- CBC with differential
- Chemistry profile as clinically indicated
- CT chest, abdomen and pelvis
- Chest x-ray, PA and Lateral
- PET/CT as clinically indicated
- Unilateral bone marrow biopsy and aspirate
- Lymphoma markers in bone marrow

First year – every 3 months, then
Years 2 and 3 – every 4 months, then
Years 4 and 5 – every 6 months, then
After year 5 – annually

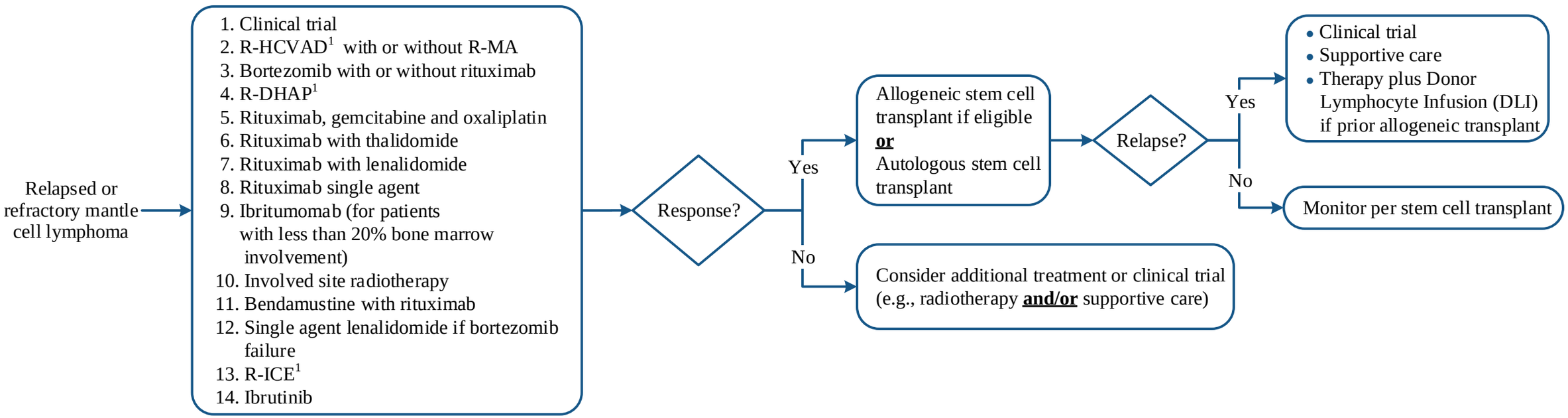
Relapsed or refractory, see Page 3

[1] MIPI = Mantle Cell International Prognostic Index, see Appendix A

[2] **Chemotherapy Abbreviations:**
R-HCVAD/ R-MA: rituximab, cyclophosphamide, mesna, doxorubicin, and vincristine alternating with rituximab, methotrexate, and cytarabine.
R-CHOP: rituximab, cyclophosphamide, doxorobucin, vincristine, and prednisone
R-DHAP: rituximab and cisplatin, cytarabine and dexamethasone
Rev-rituximab: thalidomide, lenalidomide and rituximab

Mantle Cell Lymphoma

Note: Consider Clinical Trials as treatment options for eligible patients.



[1] **Chemotherapy Abbreviations:**
R-HCVAD/ R-MA: rituximab cyclophosphamide, mesna, doxorubicin, and vincristine alternating with rituximab, methotrexate and cytarabine depending on clinical factors (e.g., age, bone marrow recovery)
R-DHAP: rituximab, cisplatin, cytarabine and dexamethasone
R**ev-rituximab:** thalidomide, lenalidomide and rituximab
R-ICE: rituximab, ifosfomide, etoposide, and carboplatin

APPENDIX A: Mantle Cell Lymphoma International Prognostic Index (MIPI)

(Used to stratify patients into risk groups according to the four prognostic factors)

Points	Age	ECOG Performance Status	LDH (ULN)	WBC (10^9/I)
0	Less than 50	0 - 1	Less than 0.67	Less than 6.700
1	50 - 59	-	0.67 – 0.99	6.700 - 9.999
2	60 - 69	2 - 4	1.0 – 1.49	10.000 - 14.999
3	Greater than or equal to 70	-	Greater than or equal to 1.5	Greater than or equal to 15.000

Total point score:
0-3 low
4-5 intermediate
6-11 high risk

SUGGESTED READINGS

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