Acute Lymphoblastic Leukemia and Lymphoblastic Lymphoma (ALL) – Adult

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1 Greater than or equal to 18 years old
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Note: Consider clinical trials as treatment options for eligible patients. Stem Cell Transplant (SCT) guidelines are not included with this algorithm. Leukemia patients should be referred and treated at a Comprehensive Cancer Center.

PATIENT PRESENTATION

Philadelphia negative precursor B (Pre B) lymphoblastic leukemia/lymphoma

CD19, CD10 (±), CD20 (±), CD22 (±)

MPO (-)

TdT (+)

BCR-ABL (-)

TREATMENT

**Age greater than or equal to 60 years**
- Consider clinical trial:\n  - Hyper-CVD plus inotuzumab ozogamicin plus blinatumomab with or without rituximab\n
**Age greater than 18 years to 59 years**
- Hyper-CVAD with or without rituximab\n  - Consider clinical trial:\n    - Hyper-CVAD with blinatumomab or
    - Hyper-CVAD with inotuzumab ozogamicin

ASSESSMENT OF RESPONSE

Complete remission\n
POST-REMISSION THERAPY/MINIMAL RESIDUAL DISEASE

- Consolidation/maintenance
  - Blinatumomab or inotuzumab ozogamicin
  - Yes
  - Surveill\n
- No\n
- Salvage therapy clinical trial\n  - Mini-HCVD inotuzumab ozogamicin\n  - Chimeric antigen receptor (CAR) T-cell therapy
  - Blinatumomab plus low dose chemotherapy (mini-HCVD)
  - Low dose inotuzumab ozogamicin
  - Surveillance

\(^1\) See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

\(^2\) Leukemia Newsletter: http://www.mdanderson.org/leukemia (available programs-treatment priorities)

\(^3\) Hyper-CVD (hyper-fractionated cyclophosphamide, vincristine, dexamethasone) plus inotuzumab ozogamicin; rituximab if CD20 greater than or equal to 20%

\(^3\) Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone) plus inotuzumab ozogamicin; rituximab if CD20 greater than or equal to 20%

\(^3\) Failure after induction with hyper-CVAD based regimen means no response after 2 cycles of chemotherapy

\(^3\) Mini-HCVD (hyper-fractionated cyclophosphamide, vincristine, dexamethasone) plus inotuzumab ozogamicin

\(^\text{Approved by the Executive Committee of the Medical Staff on 02/26/2019}\)
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PATIENT PRESENTATION

Philadelphia chromosome (Ph) positive acute lymphoblastic leukemia

CD19, CD10 (±), CD20 (±), CD22 (±)
CD13 (±), CD33 (±), CD117 (-)
MPO (-)
TdT (+)
t(9;22)(q24;q11.2)
BCR-ABL (+)

TREATMENT

Age greater than or equal to 60 years
- Hyper-CVAD plus dasatinib with or without rituximab
- Consider clinical trial:
  - Hyper-CVAD plus ponatinib with or without rituximab
  - Blinatumomab plus ponatinib
  - Inotuzumab ozogamicin plus bosutinib
  - Hyper-CVAD plus ponatinib

Age less than 60 years
- Hyper-CVAD plus dasatinib with or without rituximab
- Consider clinical trial:
  - Hyper-CVAD plus ponatinib with or without rituximab
  - Hyper-CVAD plus ponatinib

ASSESSMENT OF RESPONSE

Assess ABL mutation status
- Consider clinical trial
- Salvage therapy:
  - Blinatumomab plus ponatinib
  - Hyper-CVAD plus ponatinib
  - Inotuzumab ozogamicin plus bosutinib
  - CAR T-cell therapy

POST-REMISSION THERAPY

Complete remission?
Yes:
- Blinatumomab or
- Consolidation/maintenance or
- Allogeneic SCT

No:
- Surveillance

Stage 1:
- Surveillance

Stage 2:
- Surveillance

1. See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice.

2. Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, dexamethasone) plus inotuzumab ozogamicin; rituximab if CD20 greater than or equal to 20%

3. Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone); rituximab if CD20 greater than or equal to 20%

4. Leukemia Newsletter: http://www.mdanderson.org/leukemia (available programs-treatment priorities)

5. Failure after induction with hyper-CVAD based regimen means no response after 2 cycles of chemotherapy.

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Acute Lymphoblastic Leukemia and Lymphoblastic Lymphoma (ALL) – Adult

PATIENT PRESENTATION

- Burkitt or Burkitt-like leukemia/lymphoma
  - sIg (+), CD20 (+)
  - MPO (-)
  - TdT (-)
  - BCR-ABL (-)
  - c-myc (+)
  - t(8;14)(q24.1;q32)
  - t(8;22)(q24;q11)
  - t(2;8)(p12;q24)

TREATMENT

- Hyper-CVAD with rituximab
- Hyper-CVAD with ofatumumab or EPOCH with ofatumumab
- Consider clinical trial

ASSESSMENT OF RESPONSE

- Complete remission?
  - Yes → Consolidation → Surveillance
  - No → Consider clinical trial

POST-REMISSION THERAPY

- Consider clinical trial
- Salvage therapy:
  - EPOCH with ofatumumab or CAR T-cell therapy

Note: Consider clinical trials as treatment options for eligible patients. Stem Cell Transplant (SCT) guidelines are not included with this algorithm. Leukemia patients should be referred and treated at a Comprehensive Cancer Center.

1 See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

2 Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone) plus rituximab

3 Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone) plus ofatumumab

4 EPOCH (etoposide, prednisone, vincristine, cyclophosphamide, doxorubicin) plus ofatumumab

5 Leukemia Newsletter: http://www.mdanderson.org/leukemia (available programs-treatment priorities)

6 Failure after induction with hyper-CVAD based regimen means no response after 2 cycles of chemotherapy

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PATIENT PRESENTATION

- Precursor T lymphoblastic leukemia/lymphoma
  - CD1(±), CD3 (±), CD5 (±), CD7 (±), CD4 (±), CD8 (±)
  - MPO (-)
  - TdT (+)
  - BCR-ABL (-)

TREATMENT

- Age greater than 18 years
  - Hyper-CVAD\(^2\) with nelarabine

ASSESSMENT OF RESPONSE

- Complete remission?
  - Yes
    - Consolidation/maintenance
    - Radiation therapy if mediastinal disease
  - No\(^3\)
    - Consider clinical trial\(^4\)
    - Salvage therapy

POST-REMISSION THERAPY

- Surveillance

\(^1\) See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

\(^2\) Hyper-CVAD (hyper-fractionated cyclophosphamide, vincristine, doxorubicin, dexamethasone)

\(^3\) Failure after induction with hyper-CVAD based regimen means no response after 2 cycles of chemotherapy

\(^4\) Leukemia Newsletter: http://www.mdanderson.org/leukemia (available programs-treatment priorities)
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SUGGESTED READINGS


Continued on next page
Acute Lymphoblastic Leukemia and Lymphoblastic Lymphoma (ALL) – Adult

SUGGESTED READINGS - continued


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