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SURVEY RESULTS

These survey items served as the foundation for consensus recommendations within the SITC Acute Leukemia Immunotherapy Guideline. Further discussion during the expert panel meeting, draft revision, and teleconferences were used to refine and develop guideline recommendations derived from but not identical to statements captured in these results.

1. **What best describes your primary role? (select all that apply)**
    a. Medical Oncologist/hematologist- laboratory scientist—18%
    b. Medical Oncologist/hematologist- clinical researcher—80%
    c. Nurse—10%
    d. Patient Advocate—0
    e. Current/former patient—10%
    f. Other – please specify_____

2. **In which of the following do you have clinical experience? (select all that apply)**
    a. Chemotherapy—82%
    b. Autologous stem cell transplantation—45%
    c. Allogeneic stem cell transplantation—73%
    d. Clinical trials—82%
    e. Immunotherapy—91%
    f. Adoptive cellular therapy/ CAR T therapy—64%
    g. Other – please specify_____

3. **Which of the following therapies have you used for the treatment of ALL and/or AML? (select all that apply)**
    a. Monoclonal antibodies—91%
    b. Vaccines—36%
    c. Adoptive cellular therapy/ CAR T therapy—64%
    d. Immune-checkpoint blockade (includes costimulatory antibodies)—54%
    e. Virotherapy—10%
    f. Other – please specify_____

4. **Does immunotherapy currently play a significant role in the treatment of patients with hematologic malignancies?**
    a. Yes—90%
    b. No—10%

5. **Based on immunotherapies in development, do you expect immunotherapy to be a significant treatment option in the future for patients with hematologic malignancies?**
    c. Yes—100%
    d. No

Section 1—Diagnostics

1. **Do you recommend bone marrow testing in patients with newly diagnosed leukemia?**

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a. Yes—100%
b. No

2. **Do you recommend HLA testing in patients with newly diagnosed leukemia?**
    a. Yes—90%
    b. No—10%

3. **Which of the following molecular studies for mutations do you routinely perform for newly diagnosed ALL/AML patients? (select all that apply)**
    a. FLT-3—100%
    b. PD-L1—0%
    c. CD33—70%
    d. CD123—60%
    e. Philadelphia chromosome status—90%
    f. CDL-1—10%
    g. NPM-1—100%
    h. Kit—70%
    i. CEBPa--90%
    j. DNMT3a—90%
    k. TET2—90%
    l. IDH1—100%
    m. IDH2—90%
    n. MLL—90%
    o. Other – please specify_____

4. **If applicable, which techniques do you use for molecular testing?**
    a. PCR—73%
    b. Next-generation sequencing (RNAseq, WGS, etc.)—81%
    c. FISH—73%
    d. Other – please specify_____

5. **Do you conduct immunophenotyping testing in patients with acute leukemia?**
    a. Yes—90%
    b. No—10%

6. **If applicable, which techniques do you use for immunophenotyping?**
    a. Immunohistochemistry—40%
    b. Flow cytometry—100%
    c. Other – please specify_____

7. **Do you routinely track immune competence of patients?**
    a. Yes—27%
    b. No—73%

8. **Do you recommend initial imaging in patients with newly diagnosed leukemia?**
    a. Yes—18%
    b. No—82%

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9. **If applicable, what type of imaging do you recommend?**
    a. CT—40%
    b. MRI
    c. PET/CT—20%
    d. Other – please specify

10. **Do you recommend heart testing for patients with newly diagnosed leukemia?**
    a. Yes—100%
    b. No

Section 2—The Role of Immunotherapy for the Treatment of Patients with Acute Lymphoblastic Leukemia (ALL)

1. **For adolescent and young adult patients with ALL, do you use specific pediatric treatment regimens?**
    a. Yes—82%
    b. No—18%

2. **What is your preferred first-line regimen for patients with newly diagnosed ALL?**
    a. Clinical trial—67%
    b. CALGB (88-11, 91-11, 93-11, 95-11)
    c. Berlin-Frankfurt Munster (BFM; GM ALL)—11%
    d. Hyper-CVAD—22%
    e. MRC
    f. Other – please specify_____

3. **If a clinical trial is unavailable, what is your preferred first-line regimen for patients with newly diagnosed ALL?**
    a. CALGB (88-11, 91-11, 93-11, 95-11)—11%
    b. Berlin-Frankfurt Munster (BFM; GM ALL)—11%
    c. Hyper-CVAD—67%
    d. MRC—11%
    e. Other – please specify_____

4. **In patients with relapsed ALL after one line of prior therapy, what is your preferred treatment regimen?**
    a. Clinical trial—22%
    b. Induction chemotherapy—11%
    c. CAR T therapy—11%
    d. Blinatumomab—22%
    e. Inotuzumab ozogamizin—11%
    f. Allo-HSCT—22%
    g. Other – please specify_____

5. **In absence of an appropriate clinical trial, what is your preferred treatment regimen for patients with relapsed ALL after one line of prior therapy?**
    a. Clinical trial—22%

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b. Induction chemotherapy
c. CAR T therapy—11%
d. Blinatumomab—33%
e. Inotuzumab ozogamizin—11%
f. Allo-HSCT—22%
g. Other – please specify_____

6. In absence of an appropriate clinical trial, what is your preferred treatment regimen for patients with relapsed ALL after two or more lines of prior therapy?

a. Clinical trial—11%
b. Induction chemotherapy
c. CAR T therapy—67%
d. Blinatumomab—11%
e. Inotuzumab ozogamizin
f. Allo-HSCT—11%
g. Other – please specify_____

7. In absence of an appropriate clinical trial, what is your preferred treatment regimen for patients with relapsed ALL after two or more lines of prior therapy?

a. Clinical trial—**11%**
b. Induction chemotherapy
c. CAR T therapy—54%
d. Blinatumomab—11%
e. Inotuzumab ozogamizin—11%
f. Allo-HSCT—11%
g. Other – please specify_____

8. Do you recommend allo-HSCT for patients with relapsed ALL after second and/or third line therapy?

a. Yes—90%
b. No—10%
c. Other – please specify_____

9. Please list other immunotherapy agents, not FDA approved, for the treatment of patients with ALL of which you are aware that have demonstrated activity of note in clinical trials.

Other CAR-T constructs such as CD22

10. Do you routinely monitor ALL patients for minimal residual disease

a. Yes—100%
b. No

11. How do you monitor minimal residual disease in ALL patients?

c. Flow cytometry—50%
d. Polymerase chain reaction—40%
e. Other – NGS

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12. Do you utilize patient MRD status for treatment decisions?

f. Yes—90%
g. No—10%

13. What therapies do you recommend for patients that are MRD+ after prior therapy (Select all that apply)?

h. Blinatumomab—89%
i. CAR T therapy—33%
j. Allo-HCT—44%
k. Other – please specify_____

14. Do you recommend therapy for patients that are MRD- after prior therapy?

l. Yes—67%
m. No—33%

15. If applicable, please describe recommended therapies for MRD- patients.

HCT; Depends on pt and situation

Section 3—The Role of Immunotherapy for the Treatment of Patients with Acute Myeloid Leukemia (AML)

1. What is your preferred first-line treatment for patients with newly diagnosed AML

a. Clinical trial—67%
b. Induction chemotherapy—33%
c. Other – please specify_____

2. If a clinical trial is unavailable, what is your preferred first-line treatment for patients with newly diagnosed AML?

a. Induction chemotherapy—100%
b. Other – please specify_____

3. What is your preferred first-course induction chemotherapy regimen?

a. Combination of an anthracycline with cytarabine (7+3)—100%
b. Other – please specify_____

4. When do you consider a newly diagnosed AML patient to have "primary refractory AML?"

a. Residual leukemia (>5% blasts in the bone marrow) after two courses of induction chemotherapy—90%
b. Residual leukemia after three courses of induction chemotherapy—10%
c. Other – please specify_____

5. What is your preferred treatment for patients with primary refractory AML?

a. Clinical trial—72%
b. Gemtuzumab ozogamicin
c. Allo-HCT—28%
d. Chemotherapy
e. Other – please specify_____

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6. **If a clinical trial is unavailable, what is your preferred treatment for patients with primary refractory AML?**
    a. Gemtuzumab ozogamicin—36%
    b. Allo-HCT—45%
    c. Chemotherapy—18%
    d. Other – please specify_____

7. **When do you consider allo-HCT for primary refractory AML?**
    a. Never
    b. For young patients with good performance status—72%
    c. Other – please specify: IF CR after clinical trial Tx
    anyone we can

8. **Do you consider allo-HCT for AML patients that achieved morphologic remission after induction chemotherapy but have persistent cytogenetic abnormalities?**
    a. Yes—89%
    b. No, proceed with consolidation therapy—11%

9. **Do you consider allo-HCT for AML patients after consolidation therapy with high-dose cytarabine if they have minimal residual disease?**
    a. Yes—100%
    b. No

10. **When would you consider autologous HCT for patients with ALL?**
    a. Never—90%
    b. Yes, please specify settings: If they are in remission and you are able to obtain healthy cells from them

11. **When would you consider autologous HCT for patients with AML?**
    a. Never—80%
    b. Yes, please specify settings: MRD neg favorable or intermediate risk
    If they don't have a good match, or as a first step before allo HCT

12. **Please list other immunotherapy agents, not FDA approved, for the treatment of patients with AML of which you are aware that have demonstrated activity of note in clinical trials.**

    NK cell therapy; Ven; CART T CD123; CD33 or CD123 BiTE constructs

13. **Do your treatment recommendations for patients with APL mirror those for patients with AML?**
    a. Yes
    b. No—100%

14. **Do you recommend any of the following therapies for patients with APL (Select all that apply)?**

c. Clinical Trial—50%
d. Gemtuzumab ozogamicin—40%
e. Directed therapies—70%
f. SCT—30%
g. Chemotherapy—30%

15. **Please list other immunotherapy agents, not FDA approved, for the treatment of patients with APL of which you are aware that have demonstrated activity of note in clinical trials.**

ATO

Section 4—Immunotherapies in Development for the Treatment of Patients with Acute Leukemia

1. **In patients with ALL/AML, is stable leukemia or reduction in blasts sufficient to continue therapy as long as the toxicity level is acceptable.**
   a. Yes—100%
   b. No
   c. Other – please specify_____

Section 5—The Role of immunotherapy Post-CAR T Therapy

1. **Should immunotherapy be considered an option for patients who relapse or are refractory to CAR T therapy?**
   a. Yes—90%
   b. No—10%

2. **What is your preferred treatment (outside of clinical trials) for patients with ALL who have relapsed after or are refractory to CAR T therapy?**
   a. Secondary CAR T therapy—22%
   b. Blinatumomab—56%
   c. Allo-HCT—22%
   d. Other – please specify_____

3. **Does the potential benefit of CAR T therapies justify its movement into earlier indications that are considered 'off-label'?**
   a. Yes—78%
   b. No—22%

Section 6—How Should Immune-Related AEs Be Recognized and Managed?

No survey questions

Section 7—Patient Support and Quality of Life Considerations

1. **Cell-based therapies (i.e., CAR T therapy) require specialized labs (i.e., certified cell processing labs) and personnel. Do you believe that this may be a limiting factor in the development of future clinical trials?**

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a. Yes—67%
b. No—33%

2. **Cell-based therapies (i.e., CAR T therapy) require time (i.e., a few weeks) for production. Do you believe that the possible delay from enrollment of a patient to administration of therapy would be a limiting factor in future clinical trials?**
    a. Yes—72%
    b. No—28%

3. **Cell-based therapies (i.e., CAR T therapy) currently have significant financial costs. Do you believe that the cost associated with therapy would be a limiting factor in future clinical trials?**
    a. Yes—90%
    b. No—10%

4. **In your view, what is the optimal endpoint for early phase evaluation of an immunotherapeutic agent for treatment of hematologic malignancies?**
    a. Complete remission rate—55%
    b. Overall survival—18%
    c. Relapse-free survival—27%
    d. Other-please specify _____

6. **What, in your view, is the acceptable threshold for occurrence of grade ≥3 immune-related AEs in early clinical trials for developmental agents for the treatment of hematologic malignancies?**
    a. <5%
    b. 5-20%--67%
    c. 20-30% --33%
    d. >30%

7. **Concerning immune response criteria, which of the following statements do you agree with? (select all that apply)**
    a. Current criteria of AML response should be sufficient for evaluation of immune therapies—67%
    b. Possibility of therapy induced flare (not representing true progression) should be considered—45%
    c. Stability of previously progressive leukemia may be sufficient evidence of clinical activity of interest—28%

8. **Concerning timing of response, which of the following statements do you agree with? (select all that apply)**
    a. Current response criteria should suffice, as responses can occur as fast as they occur with chemotherapy—20%
    b. Timing should be delayed, if possible, as optimal timing for evaluation of response is not known and can be delayed—40%
    c. Timing should be tailored according to the immunotherapy used—60%

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9. **Do you provide educational materials for patients who are eligible to receive immunotherapy?**
    a. Yes—60%
    b. No—40%

10. **If applicable, please describe supplied educational materials**
    references and patient designed information sheets; handouts from good sources eg. LLS

11. **Does potential financial burden influence treatment scheduling and options for patients?**
    a. Yes—90%
    b. No—10%

12. **Do you emphasize toxicity/quality of life reporting for patients receiving immunotherapy?**
    a. Yes—100%
    b. No

13. **If applicable, please describe your response to the above question.**
    Included in informed consent process; CRS and neurologic toxicities are important to report