

Clinical Research

Newsletter for Colleagues in the Community

Stanford
Cancer Institute

A National Cancer Institute
Designated Cancer Center



Welcome to the Winter 2016 issue of the Stanford Cancer Institute Clinical Research Newsletter for Colleagues in the Community.

This quarterly publication is designed

to inform our colleagues in the medical community, and especially physicians who are considering treatment options for their patients with cancer, about current clinical trials available at the NCI-designated Stanford Cancer Institute. Many of these trials provide access to novel therapies including new “targeted” agents, often not available in the community.

As the director of the Lymphoma program, I am pleased to introduce this issue presenting Stanford’s BMT, Hematology, and Lymphoma programs. Each of these programs is nationally recognized for improving patient outcomes by translating clinical research into new treatments.

This issue also introduces our brand new Adolescent & Young Adult (AYA) cancer program, designed to meet the unique needs and treatment challenges of cancer patients ages 15–29. Survival rates for this population have not improved significantly in the last 30 years. Stanford’s AYA cancer program is the first in the Bay Area and jointly operated between Lucile Packard Children’s Hospital and Stanford Health Care.

Our BMT Program offers cutting edge medicine and excellent long-term follow up care to patients with a variety of malignant and non-malignant diseases. We support cross-disciplinary research into the molecular and genetic underpinnings of hematological disorders. In collaboration with the Center for Clinical Immunology at Stanford, the program is developing new ways to boost the immune tolerance of transplanted blood or marrow-derived stem cells. Its state-of-the-art laboratory is exploring novel cellular and vaccine-based therapies that

target hematologic disease at its most basic origins.

The Stanford Hematology Program offers state-of-the-art diagnostics, clinical trials and treatment regimens for patients with a variety of hematologic disorders. Clinical trial offerings include early stage trials of novel agents to late stage randomized trials comparing different therapies. Hematologists work closely with specialists in BMT, infectious diseases, radiation oncology, and interventional radiology. This program is committed to improving outcomes and quality of life through contributions to the prestigious National Comprehensive Cancer Network (NCCN) guidelines.

The Stanford Lymphoma Program offers multidisciplinary, personalized diagnostics and treatment for patients with Non-Hodgkin’s Lymphoma (NHL) and Hodgkin’s Disease. For over 50 years Stanford researchers and clinicians have helped define the standard of care for lymphomas, pioneering breakthrough immunotherapies, and monoclonal antibodies. This innovative program continues its groundbreaking work, offering advanced treatments that are not yet available at other institutions.

Phase 1 and 2 trials from our Developmental Therapeutics Program are also included in the newsletter. This program, led by Dr. Shivaani Kummar, former leader of the National Cancer Institute’s Developmental Therapeutics Clinic and Early Clinical Trials Development, is continually expanding its trial offerings.

We hope that you will consider a Stanford Cancer Institute clinical trial when you deem it appropriate to refer a patient to an academic medical facility.

Sincerely,

Ronald Levy, MD

Robert K. and Helen K. Summy Professor in the School of Medicine

Stanford Lymphoma Program

Cutting Edge Research, Multidisciplinary Care



The Stanford Lymphoma Program is an international leader in lymphoma research offering a multidisciplinary, personalized approach to diagnostics and treatment for patients with Non-Hodgkin's Lymphoma (NHL) and Hodgkin's Disease (HD). For over 50 years Stanford researchers and clinicians have helped to define the standard of care for lymphomas worldwide, pioneering breakthrough immunotherapies and monoclonal antibodies and offering advanced treatments that are not yet available at other institutions. In addition, the program offers national cooperative group clinical trials that lead the integration of new drugs and imaging techniques into front-line therapy.

LEADING EDGE RESEARCH

Stanford Lymphoma Program members focus their research on lymphoma pathogenesis; diagnostic and therapeutic profiling of lymphoma subtypes; novel diagnostics and immunotherapeutics; Phase I, II, and III clinical trials; cancer survivorship; and cutaneous lymphomas.

RESEARCH HIGHLIGHTS INVOLVE

- The discovery of Rituximab, a revolutionary lymphoma treatment and the best biological therapy available today to treat lymphoma. Stanford Cancer Institute researchers and physicians discovered the therapeutic effects of this monoclonal antibody and have been instrumental in developing its many applications. Some of the earliest Rituximab trials were carried out by Stanford physicians, with their patients having early access to this groundbreaking treatment. Two ongoing trials are now attempting to further increase the power of Rituximab by targeting the body's immune response.
- Continuing Innovation. Stanford lymphoma research focuses on:
 - A vaccine strategy to treat follicular NHL that is based on a combination of low dose radiation to one site of tumor and the injection of an immune stimulant

directly into that same site. An immune response ensues against the tumor and attacks the tumor throughout the body.

- An innovative clinical trial combining immunotherapy with hematopoietic stem cell transplantation for Mantle Cell Lymphoma. This trial is also developing a highly sensitive method of detecting disease relapse prior to current imaging or laboratory tests.
- Clinical trials of antibodies conjugated to a drug and directed against a target on lymphoma cells. One example is Brentuximab vedotin (now known as Adcetris) that is revolutionizing the treatment of recurrent Hodgkin's Disease. Other such agents are under study for Non-Hodgkin's Lymphoma.
- Clinical trials of novel orally administered drugs that target the signaling molecules (BTK, SYK and PI3Kinase) inside lymphoma cells that are responsible for their uncontrolled growth. One example targeting BTK is Ibrutinib (now known as Imbruvica) that is similarly revolutionizing the treatment of Non-Hodgkin's Lymphoma, specifically Mantle Cell Lymphoma and Chronic Lymphocytic Leukemia.
- Clinical trials of immune checkpoint modulators that “take the brakes off or push on the gas pedal” of the body's immune response against the lymphoma cells. Novel trials are attempting to remove the suppressive T cells inside the lymph nodes (targeting CTLA-4), increase the strength of the tumor killing T cells (targeting PD-L1), and enhance the power of the immune response following rituximab treatment (targeting CD137).
- Cutaneous lymphoma research that includes:
 - Traditional therapies used more efficiently and safely. This has been exemplified by the modification of Stanford's total skin electron beam therapy (TSEBT), known as the “Stanford TSEBT technique”, by reducing the total dose by two-thirds and combining with a potential immune-augmenting systemic agent, such as a interferon-gamma or recombinant human IL-12. Combining this low-dose TSEBT with immunotherapy may offer safe and effective clearing of disease with more durable clinical benefit than conventional radiation approaches.
 - A collaboration with genomics groups at Stanford to decipher the molecular mechanism of cutaneous lymphoma and discover new molecular targets for development of newer therapies. We now have two therapeutic trials being designed that address the actionable targets and pathways identified by our whole genome sequencing work.
 - Novel allogeneic HSCT regimen utilizing preparatory regimen of TSEBT, total lymphoid irradiation (TLI) and anti-thymocyte (ATG). TLI/ATG conditioning results in effective graft versus lymphoma effect with reduced complication of graft versus host disease. The TSEBT contributes towards more effective elimination of tumor cells in the skin, a site where response has eluded systemic therapies.
 - New immunotherapy approaches being explored in cutaneous T cell lymphoma (CTCL), including the immune checkpoint modulators, more potent topical TLR agonists, or tumor-targeted immune modulation such as anti-KIR3DL2 antibody.
- Genetics. Genome sequencing to more rapidly identify the unique mutations in each patient's tumor. Recent identification of a set of two genes whose expression predicts survival in diffuse large B cell lymphoma (DLBCL), the most common form of non-Hodgkin's lymphoma. This new test identifies which patients need more aggressive therapy.

TRANSLATIONAL RESEARCH

Advanced Treatment, Customized Care

The Lymphoma Program also includes an array of features demonstrating its dedication to translational research and customized care. Among these highlights are:

- Advanced therapies for NHL comprising:
 - Blood and marrow transplants
 - Immunotherapy
 - Experimental treatments through clinical trials
- Advanced treatments for HD focusing on:
 - A unique and highly curative chemotherapy/radiotherapy program known as Stanford V (five).
 - Biologic therapy development focusing on monoclonal antibodies and antibody-drug conjugates.
- Innovative cutaneous lymphoma treatments and technologies:
 - Mogamulizumab (KW-0761), a bioengineered, humanized monoclonal antibody against CCR4, selectively expressed on tumor cells.
 - Humanized monoclonal antibody targeting KIR3DL2, which is highly and selectively expressed on neoplastic T cells in CTCL.
 - Low-dose (12 Gy) total skin electron beam therapy combined with recombinant human IL-12.
 - Novel/newer topical agents including topical histone deacetylase inhibitors and more potent TLR agonists.
 - Non-myeloablative allogeneic hematopoietic stem cell transplantation using total skin electron beam therapy, total lymphoid irradiation, and anti-thymocyte globulin as novel preparatory regimen for patients with mycosis fungoides and Sezary syndrome.
 - Application of newer molecular diagnostic techniques for earlier and more accurate diagnosis and staging.
- Blood and marrow transplantation (BMT), with the single largest group of patients being treated with allogeneic or autologous marrow grafting. Among Stanford innovations is the non-myeloablative allogeneic transplant, an outpatient procedure with limited side effects and minimal need for hospitalization. Stanford researchers are also investigating

the efficacy of vaccine therapy concurrent with autologous BMT to prevent relapse, as well as after allogeneic BMT as treatment for relapsed lymphoma.

- A clinical database offering diagnostic results, treatment, and outcomes for more than 10,000 lymphoma and 5,000 Hodgkin's Disease patients.
- New types of imaging that use new radiologic tracers for better delineation of disease.
- Multidisciplinary tumor boards, including:
 - HD tumor board that meets weekly involving physicians from the Division of Oncology, and the Department of Radiation Oncology, along with radiologists and pathologists to review newly diagnosed, complex patients.
 - Cutaneous lymphoma tumor board that meets twice a week and is jointly directed by the Departments of Dermatology and Radiation Oncology. This multidisciplinary clinic also involves physician partners in Medical Oncology, Dermatopathology, and BMT, to provide the most comprehensive evaluation and management.

STUDIES INCLUDE

Hodgkin's Disease

- A Phase II Trial of Sequential SGN-35 Therapy with Adriamycin, Vinblastine, and Dacarbazine (S-AVD) for Older Patients with Untreated Hodgkin Lymphoma (LYMHD0009)
- A Randomized, Open-label, Phase 3 Trial of A+AVD Versus ABVD as Frontline Therapy in Patients with Advanced Classical Hodgkin Lymphoma (LYMHD0011)
- A Phase I Study with an Expansion Cohort of the Combination of Ipilimumab and Brentuximab Vedotin in Patients with Relapsed/Refractory Hodgkin Lymphoma (ECOG4412)

Non-Hodgkin's Lymphoma

- A Phase 2 Study of Brentuximab Vedotin in Combination with Standard of Care Treatment (Rituximab, Cyclophosphamide, Doxorubicin, Vincristine, and Prednisone [RCHOP]) or RCHP (Rituximab, Cyclophosphamide, Doxorubicin, and Prednisone) as Front-Line Therapy in Patients With Diffuse Large B-Cell Lymphoma (DLBCL) (LYMNHL0112)

- A Phase 1/2, Non-randomized, Open-label, Multicenter, Dose Escalation and Expansion Study of Intratumoral Injections of SD-101 in Combination with Localized Low-dose Radiation in Patients with Untreated Low-grade B-cell Lymphoma (LYMNHL0120)
- A Two-arm, Phase 1b/2 Study of IPI-145 Administered in Combination with Rituximab or Obinutuzumab in Subjects with Previously Untreated CD20+ Follicular Lymphoma (LYMNHL0126)
- A Phase I/II Study of Intratumoral Injection of SD-101, an Immunostimulatory CpG, and Intratumoral Injection of Ipilimumab, an Anti-CTLA4 Monoclonal Antibody, in Combination with Local Radiation in Low-Grade B-cell Lymphomas (LYMNHL0119)
- A Phase 1B, Multi-center, Open-label Study of Novel Combinations of CC-122,CC-223,CC-292 and Rituximab in Diffuse Large B-cell Lymphoma (DLBCL) (LYMNHL0115)
- An Open-Label, Multi-Center Phase I Study to Investigate the Safety and Tolerability of REGN1979, an Anti-CD20 X Anti-CD3 Bispecific Monoclonal Antibody, in Patients with CD20+ B-Cell Malignancies Previously Treated with CD20-Directed Antibody Therapy (LYMNHL0122)
- A Phase 1 Study Evaluating Safety, Tolerability, and Pharmacokinetics of Escalating Doses of AGS67E Given as Monotherapy in Subjects with Refractory or Relapsed Lymphoid Malignancies (LYMNHL0117)
- FLT-PET/CT vs FDG-PETCT for Therapy Monitoring of Diffuse Large B-cell Lymphoma (LYMIMG0001)
- Phase I/II Study of a CpG-Activated Whole Cell Vaccine Followed by Autologous “Immunotransplant” for Mantle Cell Lymphoma (LYMNHL0040-BMT212)
- A Phase 3b, Multicenter, Open-label, PCI-32765 (Ibrutinib) Long-term Extension Study (LYM0006-EXT)
- An Open-Label, Treatment-Option Protocol of Brentuximab Vedotin in Patients with Relapsed or Refractory Hodgkin Lymphoma, Systemic Anaplastic Large Cell Lymphoma, or CD30-Positive Cutaneous T-cell Lymphoma (LYMNHL0095-EXT)
- A Phase 1b, Open-label, Multicenter Study of Urelumab (BMS-663513) in Combination with Rituximab in Subjects with Relapsed/Refractory B-Cell Malignancies (LYMNHL0106) (SOON TO OPEN)
- A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Study of Brentuximab Vedotin and CHP (A+CHP) Versus CHOP in the Frontline Treatment of Patients with CD30-Positive Mature T-cell Lymphomas (LYMNHL0100)
- A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Study of Ibrutinib or Placebo in Combination with Rituximab in Subjects with Previously Treated Waldenstrom's Macroglobulinemia (LYMWAL0009)
- Open-Label, Multi-Center, Randomized Study of Anti-CCR4 Monoclonal Antibody KW-0761 (mogamulizumab) Versus Vorinostat in Subjects with Previously Treated Cutaneous T-Cell Lymphoma (LYMNHL0099)
- A Randomized, Open-label, Phase 3 Trial of Brentuximab Vedotin (SGN-35) Versus Physician's Choice (Methotrexate or Bexarotene) in Patients with CD30-Positive Cutaneous T-Cell Lymphoma (LYMNHL0095)
- A Phase II Study of MK-3475 (anti-PD-1 antibody) for the Treatment of Relapsed/Refractory Mycosis Fungoides/ Sezary Syndrome (LYMNHL0118)
- A Randomized Phase 2 Study to Evaluate Three Treatment Regimens of SHAPE, a Histone Deacetylase Inhibitor, in Patients with Stage IA, IB or IIA Cutaneous T-Cell Lymphoma (LYMNHL0121)
- A Phase II Study of Non-myeloablative Allogeneic Transplantation Using Total Lymphoid Irradiation (TLI) and Anti-thymocyte Globulin (ATG) In Patients with Cutaneous T Cell Lymphoma (BMT206)
- Open-label, Multicenter Phase I Study of IPH4102, A Humanized Anti-KIR3DL2 Monoclonal Antibody, in Patients with Relapsed/Refractory Cutaneous T Cell lymphoma (LYMNHL0131) (SOON TO OPEN)

• *highlighted studies are Stanford investigator initiated*

Stanford Hematology Program

Clinical Research Opportunities Allow Comprehensive Treatment Choices



The Stanford Hematology Program is heavily invested in clinical research, including early stage trials of novel drugs and late stage, randomized trials comparing different therapies. We offer state-of-the-art diagnostics in collaboration with colleagues in hematopathology and incorporate molecular testing in both diagnostic and therapeutic programs.

The Hematology program has very active research and treatment programs for a variety of hematologic disorders, including acute and chronic leukemias (ALL, AML, CLL, CML), multiple myeloma, amyloidosis, myelodysplastic syndromes, and myeloproliferative neoplasms.

Past trials available at Stanford have contributed to the approval of many transformative drugs for hematologic disorders.

- APL: arsenic trioxide
- CLL: ibrutinib, idelalisib
- CML: imatinib, dasatinib, nilotinib
- MDS: lenalidomide
- MM: lenalidomide, carfilzomib
- MPN: ruxolitinib

Multi-disciplinary collaboration is often required to guide diagnosis and treatment. The program partners with infectious disease, transplant, and other physician specialists throughout the continuum of care of an individual patient.

Collaborative, translational research programs at Stanford have led to innovative therapies for many of these diseases. Stanford faculty physicians have also been instrumental in improving patient survival and quality of life both locally and nationally through their contributions to the prestigious National Comprehensive Cancer Network (NCCN) guidelines that are widely used for the management of hematologic malignancies.

The Hematology Program also offers consultative services for benign hematologic disorders including anemias, thrombotic disorders, and bleeding problems.

STUDIES INCLUDE

Chronic Lymphocytic Leukemia (CLL)

- A Dose Escalation Study of Ibrutinib with Lenalidomide for Relapsed and Refractory Chronic Lymphocytic Leukemia/ Small Lymphocytic Lymphoma (HEM0032)
- A Phase 2 Open-Label Study of the Efficacy and Safety of ABT-199 (GDC-0199) in Chronic Lymphocytic Leukemia Subjects with Relapse or Refractory to B-Cell Receptor Signaling Pathway Inhibitor Therapy (HEMCLL0016)
- A Phase 2, Single Arm Study Evaluating the Efficacy and Safety of Idelalisib in Combination with Rituximab in Patients with Previously Untreated Chronic Lymphocytic Leukemia with 17p Deletion (HEMCLL0017)

Chronic Myelomonocytic Leukemia (CMML)

- A Phase 2, Randomized, Double-Blind, Placebo-Controlled Study of Azacitidine with or without Birinapant with a Single Arm Open-Label Run-In Phase in Subjects with Higher Risk Myelodysplastic Syndrome or Chronic Myelomonocytic Leukemia (HEM0041)

Acute Lymphoblastic Leukemia (ALL)

- A Phase II Study of Subcutaneous Bortezomib in Combination with Chemotherapy (VXLD) for Relapsed/Refractory Adult Acute Lymphoblastic Leukemia (HEMALL0008)

Multiple Myeloma

- A Randomized Phase III Study Comparing Conventional Dose Treatment Using a Combination of Lenalidomide, Bortezomib and Dexamethasone (RVD) to High-Dose Treatment with Peripheral Stem Cell Transplant in the Initial Management of Myeloma in Patients up to 65 Years of Age (HEMML0021-BMT252)

Multiple Myeloma/Amyloidosis

- A Phase I Dose-Escalation Study of Carfilzomib in Patients with Previously-Treated Systemic Light-Chain (AL) Amyloidosis (HEM0024)
- A Phase 3, Randomized, Multicenter, Double-Blind, Placebo-Controlled, 2-Arm, Efficacy and Safety Study of NEOD001 plus Standard of Care Versus Placebo Plus Standard of Care in Subjects with Light Chain (AL) Amyloidosis (HEM0043) (SOON TO OPEN)

Myeloproliferative Disorders (MPN)

- A Pilot Study of Brentuximab Vedotin (SGN-35) in CD30-Positive Systemic Mastocytosis with or without an Associated Hematological Clonal Non-Mast Cell Lineage Disease (AHNMD) (HEMMPD0016)
- A Phase II Study of Ibrutinib in Advanced Systemic Mastocytosis (HEMMPD0021)
- Prospective Evaluation of Ruxolitinib Efficacy for Chronic Neutrophilic Leukemia/Atypical Chronic Myeloid Leukemia Patients with Mutation of CSF3R (HEMMPD0022)
- A Phase 1b Open-Label Study to Evaluate the Safety, Tolerability, and Pharmacokinetics of Idelalisib in Subjects Receiving Ruxolitinib as Therapy for Primary, Post-Polycythemia Vera, or Post-Essential Thrombocythemia Myelofibrosis with Progressive or Relapsed Disease (HEMMPD0023)

Myelodysplastic Syndromes (MDS)

- A Phase 2, Randomized, Double-Blind, Placebo-Controlled Study of Azacitidine with or without Birinapant with a Single Arm Open-Label Run-In Phase in Subjects with Higher Risk Myelodysplastic Syndrome or Chronic Myelomonocytic Leukemia (HEM0041)

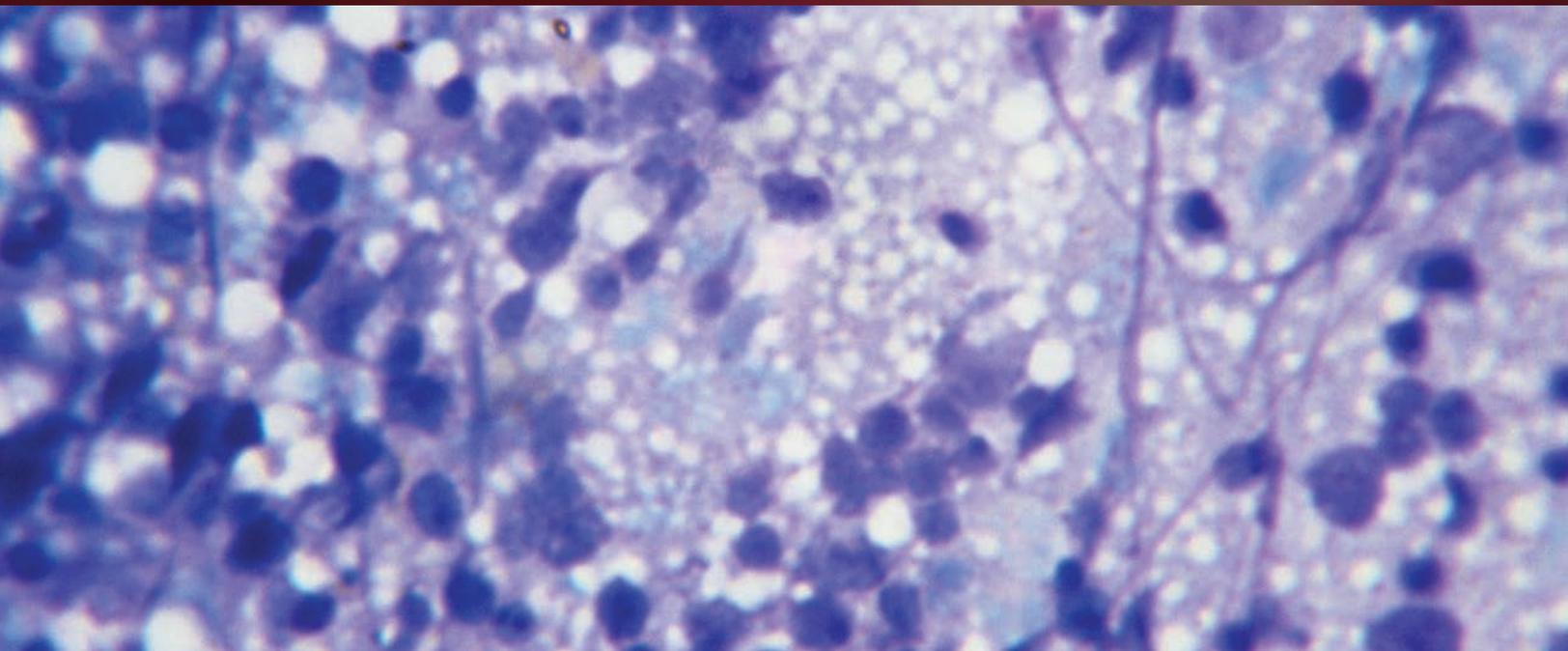
Acute Myeloid Leukemia (AML)

- A Phase I Study of MEK Inhibitor MEK162 Combined with Idarubicin and Cytarabine Induction in Patients with Relapsed/Refractory RAS-Mutated Acute Myeloid Leukemia (HEMAML0030)
- A Phase 2 Study of Temozolomide plus Vorinostat in Patients with Relapse/Refractory Acute Myeloid Leukemia (AML) (HEMAML0017)
- A Phase I Study of Lenalidomide Therapy Prior to Re-induction Chemotherapy with Mitoxantrone, Etoposide, and Cytarabine (MEC) for the Treatment of Relapsed or Refractory Acute Myeloid Leukemia (AML) (HEMAML0024)
- A Phase II Study of Single-Agent MLN9708 for the Treatment of Relapsed or Refractory Acute Myeloid Leukemia (AML) with Mutated Nucleophosmin-1 (NPM1+) (HEMAML0028)
- A Phase 3 Open-Label Randomized Study of Quizartinib (AC220) Monotherapy versus Salvage Chemotherapy in Subjects with FLT3-ITD Positive Acute Myeloid Leukemia (AML) Refractory to or Relapsed After First-Line Treatment with or without Hematopoietic Stem Cell Transplantation (HSCT) Consolidation (HEMAML0032)
- A Phase 1, Multicenter, Open-Label, Dose-Escalation, Safety, Pharmacokinetic, Pharmacodynamic, and Clinical Activity Study of Orally Administered AG-221 in Subjects with Advanced Hematologic Malignancies with an IDH2 Mutation (HEM0034)
- Liposomal Cytarabine and Daunorubicin (CPX-351) for Adults with Untreated High-Risk MDS and Non-APL AML at High Risk of Treatment-Related Mortality (HEM0030)
- A Phase II Study of CPX-351 for Treatment of AML or Higher Risk MDS Relapsed or Refractory To Prior Therapy with Hypomethylating (HMA) Agent (HEM0036)
- A Phase II Study of Decitabine in Combination with Midostaurin (PKC412) for Elderly Patients with Newly Diagnosed FLT3-ITD/TKD Positive Acute Myeloid Leukemia (HEMAML0022)

• *highlighted studies are Stanford investigator initiated*

Stanford Blood and Marrow Transplant

National Leader in Novel Research, Expert Care



The Stanford Blood and Marrow Transplant (BMT) program is a nationally recognized authority in BMT research, and the largest BMT program in Northern California. Stanford BMT clinical trials ensure the smooth translation of research findings into the most advanced patient care available today. For more than 25 years, with its cutting edge medicine, excellent long-term follow up care of patients, and multidisciplinary team of specialists, the BMT Program treats patients from around the world with a variety of malignant and non-malignant diseases, including lymphoma, myeloma, leukemia, myelodysplastic syndrome, and selected solid tumors.

STANFORD BMT RESEARCH DISCOVERIES, NEW THERAPIES WITH GLOBAL IMPACT

In addition to successful clinical practice, Stanford BMT researchers are converting their discoveries into new therapies, advancing the efficacy of hematopoietic cell transplantation for patients worldwide.

The BMT Program supports cross-disciplinary research into the molecular and genetic underpinnings of hematological disorders, improving patient outcomes by translating clinical research into new treatments. In collaboration with the Center for Clinical Immunology at Stanford, the program

is developing new ways to boost the immune tolerance of transplanted blood or marrow-derived stem cells.

Furthermore, its state-of-the-art laboratory is exploring novel cellular and vaccine-based therapies that target hematologic disease at its most basic origins.

STANFORD BMT CUTTING EDGE RESEARCH FOCUSES ON

- Cellular Therapeutics—translational research investigating specific cell populations, such as regulatory T-cells, cytokine induced killer (CIK) cells, tumor vaccines, memory T-cells and hematopoietic stem cells.

- Investigations of novel approaches to the prevention and treatment of Graft-vs.-host disease (GVHD).
- Haploidentical hematopoietic cell transplantation.
- Novel TLI/ATG allogeneic preparative regimen that reduces rates of GVHD and lowers transplant-related risks in select disease types.
- Tolerance induction with combined bone marrow solid organ transplantation.

STANFORD BMT—DISTINCT FEATURES

The BMT program has been very successful with a history of limited morbidity rates and acute mortality that is well below most published reports. Some of its many highlights include:

- Inpatient and Outpatient Transplants.
 - Stanford has expertise in managing all transplant types—autologous, allogeneic-related donor and allogeneic-unrelated donor—and in handling the most complicated cases.
 - Stanford has provided transplants to more than 5500 adult patients and performs over 300 transplants annually, with almost one-half performed in its outpatient Infusion Treatment Area with no scheduled inpatient admission.
 - Stanford has a dedicated 22-bed inpatient BMT unit, staffed by nurses who specialize in the care of BMT patients. All rooms are equipped with special HEPA filtration systems.
- Physician Expertise.
 - Twelve physicians focus exclusively on BMT with a dedicated Immunocompromised Host Infectious Disease service.
 - Patient follow up occurs over the long-term to provide support and consultation and to accurately reflect long-term outcomes, with ongoing tracking of over 90% of patients.
- Dedicated BMT Laboratory. Specialties include:
 - Good Tissue Practice/Good Manufacturing Practice processing capabilities and state-of-the-art technologies.
 - High speed cell sorting holding great promise for future treatment and prevention of graft-vs.-host disease (GVHD).
- FACT Accreditation. Stanford's BMT program is fully accredited by the Foundation for the Accreditation of Cellular Therapy (FACT) and is a member of the BMT Clinical Trials network.
- National Marrow Donor Program (NMDP) accredited transplant center, apheresis center, and collection center. Stanford's Blood and Marrow Transplant group was recently recognized by the National Marrow Donor Program for collecting over 250 peripheral blood stem cell collections for marrow transplant. Since its start in 1987, the Stanford BMT team has collected over 400 donations. BMT also received special recognition for excellence in performance surrounding donor care, product integrity, data submission, and overall service.
- Community Involvement. Faculty and Staff collaborate with patients, their families, and the medical community by contributing to the global discussion on key biomedical and technological issues shaping the future of blood and marrow transplantation. This includes:
 - Regularly conducting educational seminars for participants in the Leukemia and Lymphoma Society's Team in Training, American Cancer Society, the Bay Area Multiple Myeloma Support Group, the Fattal Foundation, and medical audiences at community hospitals and Grand Rounds across the country.
 - Actively participating in the American Society of Blood and Bone Marrow Transplantation, the American Society of Hematology, and other organizations.

STUDIES INCLUDE

- Defibrotide for Patients with Hepatic Veno-Occlusive Disease (VOD): A Treatment IND Study (BMT196)
- A Phase II Study of Non-myeloablative Allogeneic Transplantation Using Total Lymphoid Irradiation (TLI) and Antithymocyte Globulin (ATG) in Patients with Cutaneous T Cell Lymphoma (BMT206)
- Post Transplant Infusion of Allogeneic Cytokine Induced Killer Cells as Consolidate Therapy after Non-Myeloablative Allogeneic Transplantation in Patients with Myelodysplasia or Myeloproliferative Disorders (BMT217)
- Phase I/II Trial for Patients with Advanced Hematologic Malignancies Undergoing Myeloablative Allogeneic HCT with a T cell Depleted Graft with Simultaneous Infusion of Conventional T Cells and Regulatory T Cells (BMT236)
- A Phase I Study of CD8+ Memory T-Cell Donor Lymphocyte Infusion for Relapse of Hematolymphoid Malignancies Following Matched Related Donor Allogeneic Hematopoietic Cell Transplantation (BMT243)
- A Multi-Center, Phase III, Randomized Trial of Reduced Intensity Conditioning and Transplantation of Double Unrelated Umbilical Cord Blood versus HLA-Haploidentical Related Bone Marrow (Haplo) for Patients with Hematologic Malignancies (BMT248)
- A Phase 1 Safety and Tolerability Study of Infused Donor T Regulatory Cells in Steroid Dependent/Refractory Chronic Graft Versus Host Disease (BMT253)
- A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Trial to Evaluate the Protective Efficacy and Safety of a Therapeutic Vaccine, ASP0113, in Cytomegalovirus (CMV)-Seropositive Recipients Undergoing Allogeneic, Hematopoietic Cell Transplant (HCT) (BMT255)
- A Multi-center Phase II Trial Randomizing Novel Approaches for Graft-versus-Host Disease Prevention Compared to Contemporary Controls (BMT260)
- A Phase 1 Single Center Safety and Feasibility Study of Primary T Regulatory Cell Therapy to Treat Visceral Acute Graft-Versus-Host Disease Following Hematopoietic Cell Transplantation (BMT267)
- A Multicenter Open-Label Phase 1b/2 Study of Ibrutinib in Steroid Dependent or Refractory Chronic Graft Versus Host Disease (BMT268)
- A Phase 1-2 Multi-Center Study Evaluating the Safety and Efficacy of KTE-C19 in Subjects with Refractory Aggressive Non-Hodgkin Lymphoma (NHL) (BMT284)
- A Phase Ib Treatment Trial Using AbGn-168H to Treat Steroid Refractory Acute Graft-vs.-Host Disease (aGVHD) in Patients Undergoing Allogeneic Hematopoietic Cell Transplantation (BMT285)
- Post Transplant Infusion of Allogeneic CD8 Memory T-Cells as Consolidative Therapy After Non-Myeloablative Allogeneic Hematopoietic Cell Transplantation in Patients with Leukemia and Lymphoma (BMT288)

• *highlighted studies are Stanford investigator initiated*

Stanford Adolescent and Young Adult Cancer Program



The Stanford Adolescent & Young Adult Cancer (SAYAC) Program is designed to provide a holistic healthcare approach to help meet the unique needs of teenagers and young adults with cancer. Survival rates for this population have not improved significantly in the last 30 years. Though the reasons are not yet clear, it may be attributed to inadequate insurance, delays in diagnosis, and low enrollment in clinical trials. The SAYAC Program hopes to address these issues.

One of the first programs operated jointly between Lucile Packard Children's Hospital and Stanford Health Care, the SAYAC Program is the first adolescent and young adult (AYA) cancer program in the Bay Area created specifically for patients aged 15-29. The SAYAC Program was launched in April 2015 and is led by co-Medical Directors, Gary Dahl, MD and Michaela Liedtke, MD in conjunction with Program Manager/Nurse Practitioner Pam Simon. The Program works closely with the patient's hematology/oncology specialists at both institutions as a complementary consult service.

To date the SAYAC Program has been rolled out in Sarcoma, Leukemia, and, most recently, Lymphoma. In the future there are plans to expand the Program to other groups such as Neuro-Oncology, Gynecologic Oncology, and Head and Neck Oncology. The Program is also looking to provide AYA services for Bone Marrow Transplant patients.

Services offered by the SAYAC Program include:

- Fertility and Reproductive Health: Fertility preservation, sexual health, family planning
- Adolescent and Internal Medicine: General medicine, psychiatric medical management
- Supportive Care: Acupuncture, yoga, reiki, meditation, spiritual care, nutrition support, mindfulness classes
- Peer to Peer Support: Recreational Therapy services, external partner programs, AYA support groups
- Psychology and Psychiatry: Mental health services
- Education/Career Services: Focus on continuing education during therapy, resources to continue or get back to work after treatment
- Cancer Treatment: Enrollment in clinical trials, transition to long-term survivor care, treatment education taught with AYA focus
- Pain Management: Pharmacologic/non-pharmacologic management, symptom management
- Palliative Care: Medical and family planning, spiritual support for difficult decision-making

SAYAC Program services may be requested by contacting **650.498.9404** or sayac@stanfordchildrens.org.

For more information visit:

<http://www.stanfordchildrens.org/en/service/adolescent-young-adult-cancer>

Developmental Therapeutics

Phase I and II Clinical Research Program for Multiple Cancers

Stanford Cancer Center's Developmental Therapeutics (DT) Program, led by director Shivaani Kummar, MD, offers Phase 1/2 clinical trials designed to evaluate new treatments for cancer. Other faculty participating in this effort include Drs. Heather Wakelee and Joel Neal (lung cancers), A. Dimitrios Colevas (head and neck cancers), George Fisher and Pamela Kunz (GI cancers), George Sledge, Suleiman Massarweh, Mark Pegram and Melinda Telli (breast cancers), Sunil Reddy (melanoma), Ranjana Advani and Holbrook Kohrt (lymphomas), and Branimir I. Sikic.

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DT Program Director Dr. Kummar is a Professor of Medicine in the Stanford Division of Oncology and former leader of the National Cancer Institute's Developmental Therapeutics Clinic and Early Clinical Trials Development Program. Dr. Kummar's research interests focus on developing novel therapies for cancer. She specializes in conducting pharmacokinetic and pharmacodynamic driven first-in-human trials tailored to make early, informed decisions regarding the suitability of novel molecular agents for further clinical investigation. Her studies integrate genomics and laboratory correlates into early phase trials, establishing the proof of mechanism and proof-of-concept in these trials. She has published numerous articles in medical journals and serves on a number of national and international scientific committees.

As a translational clinical studies program, Developmental Therapeutics brings together outstanding physicians with

internationally regarded scientists to develop novel therapies and diagnostic modalities that utilize cutting-edge science and technologies. The program offers the opportunity for patients to enroll in clinical trials evaluating novel anticancer therapies. The overall goal of the program is to facilitate the development of promising, new treatments for cancer while ensuring the highest standards of patient safety.

Below is a sampling of currently available Phase I and II studies.

PHASE I AND II STUDIES

Multiple Solid Tumor Sites

- A Phase 1b, Open-label, Multicenter, Dose-escalation Trial of Intratumoral Injections of SD-101 in Combination with Pembrolizumab in Patients with Metastatic Melanoma (METS0003)
- A Phase 1/2 Dose Escalation and Cohort Expansion Study of the Safety and Tolerability of Urelumab Administered in Combination with Nivolumab in Advanced/Metastatic Solid Tumors and B Cell Non-Hodgkins Lymphoma (VAR0126)
- Phase I/II, First-in-Human, Dose-Escalation Study of X-396 in Patients with Advanced Solid Tumors and Expansion Phase in Patients with ALK+ Non-Small Cell Lung Cancer (VAR0098)