To: Dear Scott and Aileen, and Century for the Cure Riders, Donors and Volunteers

From: Roger K. Strair, MD, PhD
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and fellow Century for the Cure rider!

Date: January, 2012

Re: 700 miles and counting….

For seven consecutive years **The Century for the Cure** (Century) charity bicycle ride has provided financial support for several major research endeavors of The Cancer Institute of New Jersey (CINJ). All funds raised by Century participants have been used to support early phase laboratory and clinical studies that provide the foundation for the development of new therapies designed to ease the burden of cancer.

Despite great advances in therapy, many patients still suffer from the ill effects of cancer and/or its treatment. Unfortunately, breakthroughs in treatment never occur quickly enough to help all patients. More research is desperately needed.

As a consequence of Century there are now several new cancer therapies under development. Were it not for the generosity of the organizers, riders, donors and volunteers, these new therapies would not be in development and the hope of new treatments would not be realized. I will summarize some of the ongoing research below:

1. Immune Therapy for Kidney Cancer

This year, 5 patients have received a new immune therapy for kidney cancer developed at CINJ. All of the laboratory studies guiding the development of this treatment were made possible by support provided by Century. This treatment utilizes immune cells donated by a close relative. The cells are then treated in the laboratory and given to the patient to help stimulate an immune attack on the cancer. There have been some wonderful results and correlative laboratory studies demonstrate that the donated immune cells instruct the patients own immune cells to attack the cancer. Based upon initial research supported by Century, a New Jersey Commission on Cancer Research Grant was obtained. This study is ongoing.

2. A New Therapy for Patients with Leukemia

Several years ago studies revealed that when acute leukemia cells grow in the laboratory they are dependent on a component called “nuclear factor kappa B”. This component is inhibited by a commonly used ant-inflammatory agent. Research studies supported by Century then determined that nuclear factor kappa B is inhibited in the leukemia cells when patients take the anti-inflammatory drug. More than 15 patients with Acute Myelogenous Leukemia were treated on that Century sponsored clinical trial and the results were published in the journal Clinical Cancer Research. Publication means that

the results of the study are available for all to benefit from. In a new Century supported trial, the anti-inflammatory agent is combined with standard leukemia therapy to determine if the medication results in molecular changes in the leukemia cell that predict for better outcomes. This important study is a randomized trail in which half of the patients receive the new medication with standard therapy and the other half of the patients receive standard therapy alone. In 2011, a grant application to support this trial was submitted to The Leukemia and Lymphoma Society and the grant was recently funded. The initial investment of Century funds resulted in a $600,000 research grant to support the clinical trial. That was a great Century investment.

3. Listening to the Patient

Acute leukemia is a very tough disease. While many patients have a disease that enters remission with standard chemotherapy, some patients have leukemia that is resistant to treatment or relapses after remission is obtained. Such was the unfortunate situation for one patient two years ago. She was discharged from the hospital to recover from treatment, in anticipation of returning to CINJ to participate in a clinical trial testing a new agent. However, when she returned to our office two weeks later, her leukemia had regressed! Detailed analysis of her diet and living conditions raised the prospect that her disease had remitted in conjunction with her consumption of an herbal tea prepared by her mother. She was telling us that something amazing had occurred and, with resources available from Century, we listened. The tea leaves were obtained and a sample of the tea prepared in the third floor kitchen of CINJ. The tea was then tested in the laboratory and found to kill leukemia cells! This is the origin of an ongoing multi-institutional collaborative research project with Medicinal Chemists and Botanists at Rutgers, designed to isolate the active ingredient. Sponsored in part by funds from Century, great progress is being made. Tragically, the remission only lasted several months, but the hope is that isolation of the active ingredient will provide another important tool in the battle against leukemia. These studies would not have gotten off the ground without the support of Century.

4. Getting at "The Root" of the Problem

Non Hodgkins Lymphoma (NHL) is a disease which often disappears after chemotherapy treatment. However, some types have a nasty tendency to recur. The basis for recurrence is unknown. Support from Century has allowed investigators at CINJ to identify subsets of some types of lymphoma that form a unique population of cells resistant to standard chemotherapy. These are rare cells lost in the crowd until all of the surrounding cells are killed by treatment. These cells then grow back and result in relapse. The bulk of the lymphoma are like weeds and standard treatments often eradicate the weeds. However, what are left are the "roots". These "roots" of the disease are hard to identify and kill. Funds supplied by Century have supported studies that have resulted in isolation and characterization of these cells that function as "roots". Now that these cells have been isolated, attempts are underway at CINJ to target this unique population with new therapies that can be developed into clinical trials. The results obtained at CINJ with Century funds are published in the journal Hematologica and are available for investigators world-wide to build upon.

5. Transplant: Not for Everyone

A bone marrow (or hematopoietic stem cell transplant) can be a life-saving procedure. One type of transplant requires a donor of bone marrow or stem cells. Possible donors include siblings (one in four will have the right tissue type) or unrelated donors who have volunteered and are on registries. However, many patients will not have a donor. Umbilical cord blood obtained at birth is a good source of stem cells and can be used a donor source. Unfortunately, many umbilical cord blood units are too small to be used in adult transplantation. There just aren't enough cells! Research supported by Century demonstrated that "supporting" cells obtained from a relative that is not the same tissue type can make the umbilical cord blood cells work better in mice, even if there are only limiting numbers of umbilical cord blood cells. These results have led to a study in patients who might benefit from a transplant but have no donor availability other than an umbilical cord blood that would otherwise be too small (and dangerous) to use. This Century supported clinical trial will start within the next several months. Funds from Century will allow transplant as an option for patients previously excluded from this potentially life-saving procedure.

Scott and Aileen, these are some of the research endeavors that you have made possible. The funds raised by The Century for The Cure supports novel research that would otherwise not be undertaken. You have magically converted the effort of peddling up a hill, preparing a rest stop, organizing the ride into hope. Speaking for scientists; physicians; nurses; and most importantly, patients and their families and friends, please accept a loud and heart-felt THANK YOU. A patient once said "Don't let my children know that I lost a battle with cancer; make sure they understand I fought a battle that couldn't be won". Your efforts have and will continue to make fewer of those battles unwinnable.

Roger