Researchers from the La Jolla Institute for Allergy and Immunology, the Dana-Farber/Children's Hospital Cancer Center in Boston and the BloodCenter of Wisconsin in Milwaukee and others are launching Phase II of a clinical trial to investigate a potential new therapy for reducing the disorder's severest symptoms. Sickle cell anemia is a serious, painful and chronic illness that impedes blood flow and can lead to early death. More than 100,000 Americans and several million people worldwide suffer from this genetic disorder.

The phase II trial, funded by a $10.8 million grant from the National Institutes of Health, is testing an already existing drug called Lexiscan (regadenoson - Astellas Pharma US, Inc.), which is used for diagnosing heart disease. Researchers are exploring whether the drug’s anti-inflammatory effects will significantly reduce the pain and blood flow disturbances of sickle cell anemia.

A Phase I safety study was completed earlier this year. Recruitment is under way for the trial’s second phase to be conducted at treatment centers in St. Louis and seven other U.S. cities: Boston, Baltimore, Detroit, Chicago, Cincinnati, Milwaukee, and Chapel Hill, N.C.

“Our phase I results were promising. Participants experienced no adverse reactions and our tests indicated that the drug significantly reduces inflammation,” said La Jolla Institute scientist Joel Linden, Ph.D., whose studies laid the groundwork for the trial. “It is too early to tell whether this will translate into reduced pain and tissue damage. But we remain cautiously optimistic.”

Investigators expressed excitement by the prospect of reducing some of the worst symptoms of sickle cell disease, particularly periodic disease exacerbations that lead to severe pain or breathing problems, known as vaso-occlusive crises and acute chest syndrome, respectively.

Persons with sickle cell disease typically do not live beyond their late 40s or early 50s, with pulmonary problems being the most common cause of death. “Pulmonary complications of sickle cell disease can be fatal because blood flow problems restrict the amount of oxygen going to the lungs,” said David G. Nathan, M.D., president emeritus of the Dana-Farber Cancer Institute. “We are hopeful that the drug will reduce pulmonary injury and extend the lives of sickle cell patients.”

“It is a devastating disease and therapies for the two most common complications, pain and acute chest syndrome, are very limited,” said Joshua Field, M.D., of the BloodCenter of Wisconsin. “Lexiscan has the potential to help people with sickle cell anemia by decreasing the severity of these life-threatening problems.”

The sickle cell trial grew out of research by Dr. Linden, who is a leading expert on adenosine receptors, which are known to act as a natural brake on inflammation. While Dr. Linden had previously explored adenosine’s role in protecting tissues from damage due to low blood flow in single tissues such as in heart disease, he was struck one day with the idea that it might also protect people with sickle cell disease, who suffer tissue damage from poor blood flow to most tissues.

Dr. Linden began testing his theory in mouse models about four years ago and found that adenosine-like compounds significantly reduced the damaging effects of the disease. He was aware of an existing FDA approved adenosine-like drug, Lexiscan that had already been approved for another use. “This was good news since it meant that Lexiscan was known to be safe in humans and could probably gain rapid approval if proven effective in clinical trials as a treatment for sickle cell disease,” he said.

Phase II will be a placebo-controlled trial that will expand to include patients experiencing pain crises and acute chest syndrome, and children over 14. It is being funded primarily by the NIH National Heart, Lung, and Blood Institute.

Dietary changes may reduce death risk in men with prostate cancer

Replacing carbohydrates and animal fat with vegetable fat may be associated with a lower risk of death in men with nonmetastatic prostate cancer, according to a report published online by JAMA Internal Medicine.

“Nearly 2.5 million men currently live with prostate cancer in the United States, yet little is known about the association between diet after diagnosis and prostate cancer progression and overall mortality,” according to the study background.

Erin L. Richman, Sc.D., of the University of California, San Francisco, and colleagues at UCSF examined fat intake after a diagnosis of prostate cancer in relation to lethal prostate cancer and all-cause mortality. The study included 4,577 men diagnosed with nonmetastatic prostate cancer between 1986 and 2010 who were enrolled in the Health Professionals Follow-up Study.

Replacing 10 percent of calories from carbohydrates with vegetable fat was associated with a 29 percent lower risk of lethal prostate cancer and a 26 percent lower risk of death from all-cause mortality, according to the study results.

“In this prospective analysis, vegetable fat intake after diagnosis was associated with a lower risk of lethal prostate cancer and all-cause mortality,” the authors comment. The authors note oils and nuts were among the top sources of vegetable fats in the study population.

“Overall, our findings support counseling men with prostate cancer to follow a heart-healthy diet in which carbohydrate calories are replaced with unsaturated oils and nuts to reduce the risk of all-cause mortality.

The potential benefit of vegetable fat consumption for prostate cancer-specific outcomes merits further research,” the authors conclude.