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For immediate release:

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Editors note: Research, new techniques and improved facilities by Philadelphia International Medicine hospitals and physicians may lead to new ways to treat some of our most challenging diseases. Below are just some examples from our hospitals.

Temple Cardiologists Offer Patients the Latest in Wireless Cardiac Catheterization Technology

PHILADELPHIA— Temple University Hospital (TUH) is the first in the Philadelphia region to use the St. Jude Medical PressureWire™ Aeris technology, a wireless tool that utilizes Fractional Flow Reserve (FFR) to measure the functional severity of blockages in the coronary arteries based on the pressure drop across a blockage.

Upon catheterization, TUH cardiologists turn on the St. Jude Medical PressureWire™ Aeris, and use it to assess the severity of coronary blockages, without additional equipment or cabling. Fractional Flow Reserve (FFR) data is transmitted wirelessly from the device and integrated directly into the patient's study record, where it is used as the basis for decisions about medical treatment. Over the course of a typical catheterization, the PressureWire Aeris eliminates 10 to 15 minutes of extra set-up and/or procedural time normally required when using non-wireless systems.

TUH cardiologists have already treated dozens of patients using the PressureWire. Over 1 million Americans undergo catheterization procedures each year, and for them, the level of accuracy provided by FFR-enabled devices like the PressureWire prevents unnecessary stenting and reduces the risk of adverse events.

"I can quickly determine the condition of a patient's coronary arteries and decide on the best course of action, without extra setup time or equipment, using the PressureWire. It gives me the data necessary for making the right decisions about treatment," said Riyaz Bashir, MD, director of Vascular

and Endovascular Medicine for the Department of Medicine in the Section of Cardiology at Temple University Hospital and associate professor of Medicine at Temple University School of Medicine.

“Best of all, studies show FFR devices like the PressureWire improve patient outcomes while simultaneously reducing costs,” said Dr. Bashir, referring to *A New England Journal of Medicine* study that compared FFR-guided treatment technology to stenting with angiography alone, and found a 28-percent reduction in adverse events (including heart attack, death, or repeat revascularization) and an 11-percent reduction in costs.

PressureWire Aeris’ wireless technology also benefits Temple’s clinical environment. Its use reduces the risk of contamination of the catheterization lab’s sterile field, since it does not require additional cabling inside the lab.

The technology respects the individual equipment preferences of TUH cardiologists, since the PressureWire’s unique configuration allows physicians to insert their preferred stent delivery system directly over the device, reducing procedural time and making stenting quicker and easier.

Note: Dr. Bashir has no financial interest in St. Jude Medical.

Fox Chase Researchers Uncover New Risk Factors for Brain Metastases in Breast Cancer

Nearly one-fifth of all metastatic breast cancer patients develop brain metastases and have significantly shorter overall survival than patients who do not have brain involvement. One way to improve the affected patients’ survival might be to prevent the brain metastases from developing. Researchers have been working on a predictive model that accurately identifies these high risk patients. Now, Veeraiah Siripurapu, MD, and colleagues from Fox Chase Cancer Center have verified several factors—including high tumor grade, negative progesterone receptor status, and inflammatory breast cancer—that are associated with an increased risk.

“If we can identify those patients who are predisposed to brain metastases, we may be able to mirror the model used in small cell lung cancer where prophylactic cranial irradiation has decreased the frequency of brain metastases and improved patient survival,” says Dr. Siripurapu, a surgical oncology fellow at Fox Chase, who will present the new data at the 33rd Annual San Antonio Breast Cancer Symposium.

In this study, Dr. Siripurapu and colleagues identified 49 patients with brain metastases who were included in a prospectively-collected database of breast cancer patients. They compared these patients with control patients who had similar tumor size, nodal status, and estrogen receptor status at diagnosis but lacked brain tumors. The patients with brain metastases had a median overall survival of just 38.6 months compared with the group of control patients that had not reached a median overall survival with a mean follow-up of 100 months.

When the team compared the tumor characteristics of the two patient groups, they found that prior non-brain metastases, high nuclear tumor grade, progesterone receptor negativity, and inflammatory breast cancer were associated with an increased risk of brain metastases in a univariate analysis with high nuclear grade remaining significant in a multivariable analysis.

“The data are accumulating in the literature with regard to what tumor characteristics are associated with brain metastases, but there is no consensus on what should be included in a model to predict risk,” Dr. Siripurapu says. “Factors such as age, tumor grade, lobular or mixed histology, estrogen receptor negativity, Her2/Neu status, and number of extra-cranial metastases have all been taken into consideration, and some investigators have suggested recently that a predictive tool can be formulated. We agree with that.”

“Looking at our case-control analysis – which is a novel approach for this question – we also found that high tumor grade was certainly a marked factor in risk. Progesterone receptor negativity and a diagnosis of inflammatory breast cancer may also be valuable additions to a predictive model,” Dr. Siripurapu added.

Dr. Siripurapu cautions that it is too early to say how a predictive model might alter patient care. “At a minimum, we might be able to use it to identify patients who should be followed more closely,” he says. “Ultimately, we might be able to use in a preventive treatment strategy, but that would require having a model that has higher sensitivity and specificity than we can achieve right now.”

Finally, while prophylactic cranial irradiation has improved overall survival in patients with small cell lung cancer, Dr. Siripurapu is cautious that researchers would need to prove that this was also true for breast cancer patients before such an approach could be widely adopted. “The importance of piecing together a strong predictive model is that it would allow us to test the possibility in a randomized clinical trial.”

Co-authors on the study include Karen Ruth, MS; Massimo Cristofanilli, MD; Brian L. Egleston, MPP, PhD; Elin R. Sigurdson, MD, PhD; Gary M. Freedman, MD; Lori J. Goldstein, MD; and Richard J. Bleicher, MD, all of Fox Chase.

Jefferson Offers Adult Kidney Transplant Patients Lower Wait Times

A recent listing* of Philadelphia adult kidney transplant programs by The Scientific Registry of Transplant Recipients (SRTR) has listed the transplant program at Thomas Jefferson University Hospital as having the shortest wait times in the area for patients seeking a transplant among programs that have a three-year survival rate of greater than 90 percent. The median wait time for adult patients seeking a kidney transplant at Jefferson was 37 months. Other city

hospitals that had comparable patient survival rates following transplant had median wait times of between 62 and 72 months.

The report covered kidney transplant cases from January 1, 2008 through December 31, 2009. During these two years, there were 430 patients on the Jefferson waiting list. Half of the patients listed at Jefferson had received a transplant as of 37 months after being placed on the waiting list, which was shorter than almost all adult programs. Pediatric programs had shorter wait times which is not surprising and is consistent with kidney allocation rules. The single adult program in the region with a shorter waiting time had a significantly worse patient survival post transplant. Waiting times for transplantation differ from hospital to hospital and also from person to person, depending upon many factors, such as individual medical condition, genetic characteristics and sensitivity of the candidate.

“Patients seeking a kidney transplant at Jefferson have an average wait time of slightly over three years. Waiting is a significant part of their care and is unfortunately a time period when vascular disease progresses,” said Adam Frank, MD, assistant professor, Department of Surgery at Jefferson Medical College of Thomas Jefferson University. “Compare that number to the wait times at other area hospitals and there is a dramatic difference. Patients at other hospitals may be waiting as long as six years for a new kidney.”

Highly experienced physicians, nurses, counselors and surgeons in the Division of Transplantation, which is part of the Department of Surgery, work with patients and their families to determine if they are candidates for transplantation, and follow them through post-op care to ensure the transplanted organ is functioning properly. As a leading academic institution, Jefferson’s focus goes beyond patient care and includes active research protocols to advance the clinical experience. The division is led by Cataldo Doria, MD, PhD, Nicoletti Family Professor of Transplant Surgery. In addition to Drs. Doria and Frank, the surgical team also consists of Warren Maley, MD, associate professor of Surgery; and Carlo Ramirez, MD, associate professor of Surgery.

The Scientific Registry of Transplant Recipients is a national database of transplantation statistics. Founded in 1987, the registry exists to support the ongoing evaluation of the scientific and clinical status of solid organ transplantation, including kidney, heart, liver, lung, intestine, and pancreas. Data in the registry are collected by the Organ Procurement and Transplantation Network (OPTN) from hospitals and organ procurement organizations (OPOs) across the

country. The SRTR contains current and past information about the full continuum of transplant activity, from organ donation and waiting list candidates to transplant recipients and survival statistics. This information is used to help develop evidence-based policy, to support analysis of transplant programs and OPOs, and to encourage research on issues of importance to the transplant community.

*Scientific Registry of Transplant Recipients. Center and OPO-specific Reports, July 2009: www.ustransplant.org/csr/current

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