Dr. Viraj Master Leads Collaborative Research

The patients of Dr. Viraj A. Master, PhD, MD, know him for his surgical skill, gentle manner, and commitment to patient education. Yet there is more to his outstanding reputation. Worldwide, medical colleagues recognize Master’s contributions in collaborative and innovative cancer research that has powerful implications for patients and clinicians.

Three recent accomplishments stand out:

- **Research shows that low-fat diet slows growth rate of prostate cancer in the bone**
  “Doctor, what can I do to prevent this cancer from reoccurring?” Patients often ask this, says Master, yet research has not responded. Few studies have addressed patient-initiated methods to prevent recurrence of prostate cancer.

  To address this research need, Master synergized his passion with the skills of his colleagues and medical students. The 2008 Howard Hughes Institute Grant funds medical student Timothy Johnson to work with Master and colleagues with decades of expertise in tumor cell research.

  The initial studies compared the effect of diet on bone metastasized tumors in mice. One group of mice received a diet of 10% fat, the other group 40% fat (the percentage of fat in the average American diet). Initial results showed that, at the cellular level, the tumors in the mice with the low-fat diet grew at a significantly slower rate.

  “These results are remarkable in bone metastasized tumors,” said Master. “It’s not unusual for prostate cancer to move into the bone, and when it does, treatment options are limited. Our findings may point to ways patients can act to help prevent cancer recurrence.”

  The initial results need further confirmation and development, which will require additional resources. For example, equipment is needed that can even more precisely measure the effect of diet and exercise at the cellular level.

- **Results show that patients misunderstand common written screening tests**
  Master presented research about patients’ literacy and numeracy at the 2008 Clinical Congress of the American College of Surgeons. The studies concluded that many patients misunderstand written screening tests commonly used in American medicine.

  In the first study at an inner-city hospital where literacy levels were low, only 16% of patients understood all seven questions on a commonly used questionnaire in urology. Significantly, most patients thought they understood the questions. A second study found that even among some highly literate patients, their ability to discuss numerical questions, such as percentages or probability, was limited.

  Assisted by seven Emory medical students, Master went on to look at methods to improve patient comprehension. They found that a computer-animated interviewer improved understanding.

  This important research was selected for presentation at the 2008 Clinical Congress of the American College of Surgeons, and was featured by U.S. News and World Report.

- **Long-term control of advanced kidney cancer**
  As a surgeon and clinician, Master focuses on high-risk disease, especially addressing advanced kidney cancer. Positive results with better outcomes for advanced kidney cancer in the liver were published this year by the American College of Surgeons.

  Working with a multi-disciplinary team of doctors, Master demonstrated that meaningful long-term control of advanced kidney cancer was possible. The team approach relies on excellent communication with and participation of the patient. This protocol is high-reward but very high-risk, Master emphasizes, and is only appropriate for certain patients.

  Master holds a vision for his ongoing work with the collaboration of colleagues and students and a laboratory equipped with advanced technology. He is excited about “further unraveling the mystery of how the advances of medical science can benefit those with high-risk disease, and how to bring those advances together with what the patient can do.”
In January, Emory urologists screened more than 60 retired NFL players for prostate cancer. Among those screened were Atlanta Falcons’ Tommy Nobis, Jeff Van Note, and Billy “White Shoes” Johnson, as well as other NFL standouts.

The screenings were part of a prostate health awareness and research program launched by the NFL Player Care Foundation in partnership with the American Urological Association. The program will screen 500 former NFL players in the U.S. this year.

“We were thrilled to participate in this program, which leverages the resources of the AUA and NFL’s public prominence to promote prostate cancer screening,” said Dr. Fray Marshall, chair of the Department of Urology.

One man in six will get prostate cancer during his lifetime, and one man in 35 will die of the disease. African Americans have the highest incidence of prostate cancer of any racial group.

In the last five years, the rate of survival with prostate cancer has improved significantly, at least in part due to early diagnosis and therapy. Prostate cancer is highly treatable when caught early.

The message from the event goes out to all men over 50—get screened, and stay in the game for life.