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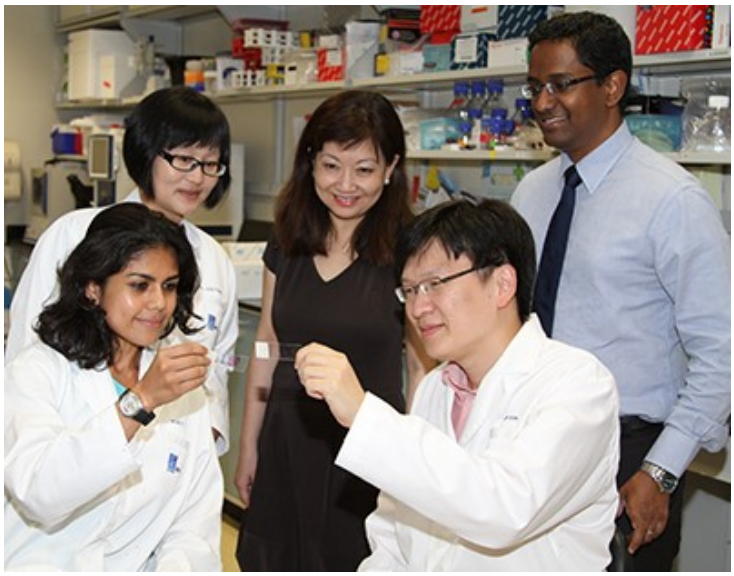
ASIA EDITION

Diagnostic kit to assess kidney cancer treatment result

01 August 2014 | News | By BioSpectrum Bureau



Singapore: Researchers at Institute of Bioengineering and Nanotechnology (IBN), Singapore General Hospital (SGH) and National Cancer Centre Singapore (NCCS) have co-developed a molecular test kit that can predict treatment and survival outcomes in kidney cancer patients.

According Professor Jackie Y Ying, executive director, IBN, "By combining our expertise in molecular diagnostics and cancer research, we have developed the first genetic test to help doctors prescribe the appropriate treatment for kidney cancer patients based on their tumor profile."

The assay is designed to study and diagnose real-world tumor samples from patients and distinguish patients into groups of different survival and treatment outcomes. This is one of the first assays capable of predicting outcomes of anti-angiogenic therapy, a key goal for cancer care and industry.

Dr Min-Han Tan, team leader and principal research scientist, IBN commented that, "As a practicing oncologist, I have cared for many patients with kidney cancer. I see the high costs of cancer care, the unpredictable outcomes and occasional futility of even the best available drugs. This experience inspired our development of this assay to improve all these for patients."

The study was conducted retrospectively with tissue samples collected from close to 280 clear cell renal cell carcinoma (ccRCC) patients who underwent surgery at SGH between 1999 and 2012.

"High quality tissue samples are crucial in achieving significant findings in biomedical research. As an Academic Medical Center, we wish to promote the translation of research into advances in healthcare and personalized medicine. The development of this test kit for patient care, utilizing the robust tissue archive that we have at SGH, is a good example of this," said Professor Tan Puay Hoon, head and senior consultant, department of pathology, SGH.

Kidney cancer is among the ten most frequent cancers affecting men in Singapore, according to Singapore Cancer Registry

(2009-2013). The most common type of kidney cancer is clear cell renal cell carcinoma. Treatment options include surgery, ablation or removal of the tumor, or targeted therapy to shrink or slow the growth of the cancer. The latter works by blocking the growth of new blood vessels (angiogenesis) or important proteins in cancer cells (tyrosine kinase) that nourish the tumors and help them survive.

According to Dr Min-Han Tan, there are currently about 250 new patients diagnosed with kidney cancer per year in Singapore. "Outcomes can be very different. Some patients can be observed for years on end, some benefit from immediate treatment including surgery or targeted therapy, and for some patients, treatment can be futile. Experience is required in making the right judgment for patients. We hope our assay will play a role in helping that judgment."