

4 April 2018

MEDIA RELEASE
For immediate release

Taking a standard prostate cancer drug with low-fat food, instead of on empty stomach, could boost outcome and lower drug costs by 75% for patients with reduced daily dosage

The multi-site study with United States is part of National University Cancer Institute, Singapore's larger efforts to address escalating costs of oncology drug treatment with research that focus on high quality and high value care

Singapore, 4 April 2018 – Prostate cancer patients taking *Abiraterone Acetate*, a standard drug for prostate cancer, with a low-fat meal instead of on an empty stomach, as prescribed, could decrease their daily dose, boost outcome and lowers cost for the patient.

Researchers from National University Health System (NUHS) including National University Cancer Institute, Singapore (NCIS) and National University Hospital (NUH) are part of this multi-site study with University of Chicago and cancer centres in the United States, that designed this clinical trial that could compare the cost, risks and benefits to bring about cost savings to the patients.

Abiraterone Acetate, approved for use in 2013 by the Health Sciences Authority of Singapore, is the standard medicine used to treat metastatic castration-resistant prostate cancer. It has a “food effect” that is greater than any other marketed drug. When taken with food, prostate cancer patients could decrease their daily dose of *Abiraterone Acetate*, prevent digestive issues and cut costs by 75 percent.

The amount of *Abiraterone Acetate* that gets absorbed and enters the blood stream can be multiplied four or five times if the drug is swallowed with a low-fat meal (7 percent fat, about 300 calories). That can increase to 10 times with a high-fat meal (57 percent fat, 825 calories).

The standard schedule requires patients to fast overnight, take four of the 250 milligram pills first thing in the morning. Then, wait at least one more hour before eating breakfast. Researchers observed that the standard therapy seemed wasteful and caused inconvenience to patients. Hence, they designed a randomised clinical trial to see if the drug could be used more efficiently and lower cost.

Researchers from the multi-site team designed a clinical trial of taking this drug with or without breakfast. The clinical trial was launched in 2012 and enrolled 72 patients with advanced prostate cancer. Half of those patients agreed to take the recommended dose of 1,000 milligrams: four pills each morning with water on an empty stomach. They had to wait

an hour afterwards before they could eat breakfast. The other half were told to take one-fourth of the standard dose, a single 250-milligram pill, with a low-fat breakfast such as cereal with skim milk. Patients were advised to avoid high-fat items such as bacon or sausage.

At the end of the study, the researchers found that the patient group which took a lower dose with breakfast kept the disease under control as well as the patient group which took the recommended dose. The drug, *Abiraterone Acetate's* ability to lower levels of prostate-specific antigen, a surrogate marker for prostate cancer, was slightly greater for patients in the low-dose with food group when measured at 12 weeks.

“With this finding, we are confident that the patient gets to enjoy a simplified schedule, has slightly more control over his daily life and the opportunity for cost-savings,” said Dr Yong Wei Peng, Senior Consultant, Department of Haematology-Oncology, National University Cancer Institute, Singapore (NCIS). “A one-month supply of the recommended dose of *Abiraterone Acetate* costs about \$4,000 to \$5,000. That adds up to a little more than \$60,000 each year. Many patients take the drug for two to three years. With this study, the lower drug dose therapy may be a cheaper and more effective option compared to the standard stable of treatments for prostate cancer patients.”

The progression-free survival rate, for patients in both the low- and high-dose groups, is about 8.6 months. Despite the small size of the study, the authors of the study were confident that outcomes were positive for patients who took the lower drug dose with food and that was comparable to the group of patients who took the recommended standard drug dose on an empty stomach. It was also slightly more convenient and much less expensive for the patients who took the lower dose drug with food.

“There is a lot of interest in Asia to initiate a larger trial for validation of the study. This may potentially result in substantial cost savings for patients in the region,” said Associate Professor Edmund Chiong, Senior Consultant, Division of Surgical Oncology (Urology), NCIS and Head, Department of Urology, National University Hospital (NUH), who is also an author in this study.

“This multi-site clinical trial is part of a larger effort in NUHS to mitigate the high cost of oncology oral medications. We have formed a Value of Oncology Treatment Group at NCIS to formulate strategies to assess the value of cancer drugs against metrics such as costs, risks and efficacy to bring about more benefits to patients,” said Professor Goh Boon Cher, Senior Consultant and Deputy Director (Research), NCIS, who is leading this initiative at NCIS.

According to the Singapore Cancer Registry, 3,456 men were diagnosed with prostate cancer from 2009 to 2013. This makes it the third most common cancer among men in Singapore and the fifth leading cause of cancer deaths.

This multi-site study is a collaboration between the NCIS and the Department of Urology of NUH, in partnership with US researchers from the University of Chicago, US National Cancer Institute, Emory University and the Illinois Cancer Care in Peoria, Illinois.

Note to Editor:

The study, “*A prospective international randomised phase II study of low-dose abiraterone with food versus standard dose abiraterone in castrate-resistant prostate cancer*” is published in the Journal of Clinical Oncology, 28 March 2018.

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About the National University Health System (NUHS)

The National University Health System (NUHS) is an integrated Academic Health System and Regional Health System in Singapore that delivers value-driven, innovative and sustainable healthcare.

Institutions in the NUHS group include four hospitals - National University Hospital, Ng Teng Fong General Hospital, Jurong Community Hospital and Alexandra Hospital (in 2018); three National Specialty Centres - National University Cancer Institute, Singapore (NCIS), National University Heart Centre, Singapore (NUHCS) and National University Centre for Oral Health, Singapore (NUCOHS); a polyclinic group - the National University Polyclinics (NUP); one medical centre – Jurong Medical Centre; and three academic health sciences institutions – NUS Yong Loo Lin School of Medicine (including the Alice Lee Centre for Nursing Studies), NUS Faculty of Dentistry and NUS Saw Swee Hock School of Public Health.

With member institutions under a common governance structure, NUHS creates synergies for the advancement of health by integrating patient care, health science education and biomedical research.

As a Regional Health System, NUHS works closely with health and social care partners in the public, private and people sectors to develop and implement programmes that contribute to a healthy and engaged population in the Western part of Singapore.

For more information, please visit www.nuhs.edu.sg



Yong Loo Lin School of Medicine
Faculty of Dentistry
Saw Swee Hock School of Public Health



National University
Centre for Oral Health, Singapore

National University
Polyclinics

About the National University Hospital (NUH)

The NUH is a tertiary hospital and major referral centre for a comprehensive range of medical, surgical and dental specialties. The Hospital also provides organ transplant programmes for adults (in kidney, liver and pancreas) and is the only public hospital in Singapore to offer a paediatric kidney and liver transplant programme. Staffed by a team of healthcare professionals who rank among the best in the field, the NUH offers quality patient care by embracing innovations and advances in medical treatment.

In 2004, the NUH became the first Singapore hospital to receive the Joint Commission International (JCI) accreditation, an international stamp for excellent clinical practices in patient care and safety. Today, patient safety and good clinical outcomes remain the focus of the hospital as it continues to play a key role in the training of doctors, nurses and allied health professionals, and in translational research which paves the way for new cures and treatment, offering patients hope and a new lease of life.

A member of the National University Health System, it is the principal teaching hospital of the NUS Yong Loo Lin School of Medicine and the NUS Faculty of Dentistry.

For more information, please visit www.nuh.com.sg.

About the National University Cancer Institute, Singapore (NCIS)

The National University Cancer Institute, Singapore (NCIS) is a national specialist centre under the National University Health System (NUHS). It is the only public cancer centre in Singapore treating both paediatric and adult cancers in one facility.

NCIS provides a broad spectrum of cancer care and management from screening and early diagnosis to treatment and long-term care, bringing together professionals with various specialties including doctors, surgeons, nurses, medical imaging professionals, pharmacists, and rehabilitative therapists.

Besides improving the quality of care to cancer patients, NCIS believes in training and nurturing the next generation of healthcare professionals in this field of medicine. Many of our clinicians assume dual roles - serving as surgeons as well as physicians while lecturing at the Yong Loo Lin School of Medicine at the National University of Singapore (NUS).

For more information about NCIS, please visit <http://www.ncis.com.sg>