Vitamin K antagonist (VKA) Warfarin is the world’s most commonly prescribed anticoagulant for various cardiovascular indications such as atrial fibrillation, mechanical heart valves, and deep vein thrombosis. However, the use of warfarin is complicated by its narrow therapeutic index and variation in INR target based on indications, necessitating frequent dose adjustments.

At Sarawak General Hospital Heart Centre, the cardiac anticoagulation clinic is run by a multidisciplinary team, including pharmacists, nurses and doctors. Several studies had been conducted on the thrombotic disorders and antithrombotic compounds at our centre over the years. New anticoagulants (NOACs) such as dabigatran, rivaroxaban and apixaban has emerged over the past few years. However, the use of these medications is limited due to the cost and limited indications, resulting in warfarin to be the main anticoagulant in use for the time being. Hence, intensive research in this field is warranted to delineate a strategy to predict warfarin treatment doses.

In 2013, a local paper by Dr Wong Jin Shyan (Figure 1) reported a 0.75% prevalence of asymptomatic atrial fibrillation (AAF) in hypertensive patients in a primary care setting. This study has also suggested that the cut-off age for AAF screening is 60. These data is important as previous such data in the primary care setting in Malaysia was never published before.
Subsequently, a local paper on bleeding rate in our cohort of adult patients taking Warfarin in Sarawak was published in the Journal of Thrombosis and Thrombolysis (Figure 2) as a result of the collaboration between our clinical team with the team from University of Birmingham, whereby our pharmacists were involved in data collection of patients who were under follow-up at our cardiac anticoagulation clinic.

**Bleeding events and associated factors in a cohort of adult patients taking warfarin in Sarawak, Malaysia**

Frances Edwards • Paul Arkell • Alan Yean Yip Fong •
Lesley M. Roberts • David Gendy • Christina Siew-Hie Wong •
Joanna Chee Yien Ng • Lee Len Tong • Faridah Mohd Salleh Bibi •
Lana Yin Hui Lal • Tiong Kiam Ong • Michael Abouyannis

With better understanding in control in terms of INR and time in therapeutic range (TTR), as well as the rate of thromboembolic and bleeding events among our patients on Warfarin from the previous research projects, a further project was conducted to look at the newer biomarkers in patients with non-valvular atrial fibrillation who were taking Warfarin. This study, a collaboration between three institutions, was the first in Asia looking at plasma concentration levels of the clotting factors in the common pathway of the coagulation cascade, Factors IIa (thrombin) and Xa, in patients on long term Warfarin therapy (Figure 3). This paper was published this year in the recent June issue of ASEAN Heart Journal.

**Thrombin and FXa plasma concentration levels in patients with atrial fibrillation on long term warfarin therapy**

Lim MSH1,2, Anchah L1, Tiong WN3, Hwang SS4, Ong TK5, Sim KH6, Fong AYY7,8

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It is an honour for our research team to receive recognition after years of hard work and great effort when this research project was chosen for oral presentation in several conferences. This project won the first prize of the Malaysian Young Investigator Award (YIA) for 2 consecutive years in 2013-2014 at the National Heart Association of Malaysia (NHAM) conference and 3rd prize of the ASEAN YIA this year at the ASEAN Federation of Cardiology Congress (AFCC) 2014. Dr. Tan Sian Kong, cardiologist of Sarawak General Hospital Heart Centre, presented on behalf of the team on “Clinical outcome of Factor IIa and Xa inhibition in long term Warfarin treated population” for the Malaysian YIA 2013 and ASEAN YIA 2014. Dr. Diana Foo Hui Ping, our CRC medical officer, presented on “Impact of gender on plasma thrombin levels in patients with atrial fibrillation on long term warfarin therapy” for the Malaysian YIA 2014. In addition to that, Dr Lawrence Anchah had presented and won a prize in the 8th National Pharmacy R&D Conference this year with “The association of thrombin and factor Xa with the time in therapeutic range in patients on long term warfarin therapy”, while our CRC pharmacist, Miss Melissa Lim Siaw Han, had also presented and won a free paper at the NHAM 2013 with “The prevalence of VKORC1 (G>A) polymorphism and its association with weekly warfarin dose requirement in multiethnic Sarawak population with atrial fibrillation” and a consolation a prize at the 5th Sarawak State Research Day last year with “Factors influencing time in therapeutic range in a multiethnic group of patients on long term warfarin anticoagulation”.

Recently, an international collaboration with a University in Korea was proposed involving the role of genetics in warfarin dose prediction. This joint project will also be focusing on the genetic differences between different Asian populations to better understand and improve the management of warfarin treated patients.

We would like to take this opportunity to acknowledge the great teamwork behind the scene contributing to the success of these research projects. We would also like to thank Ministry of Health Malaysia (MOH) for their full support throughout this project. We hope that more fruitful projects with valuable clinical impact will result from this and more projects associated with other anticoagulants to be conducted in future.
ANTICOAGULATION RESEARCH AT CRC SGH: THE EARLY STEPS
By: Dr. Diana Foo Hui Ping, Melissa Lim Siaw Han, Clinical Research Centre, Sarawak General Hospital

Dr. Diana Foo Hui Ping receiving award for Malaysian YIA 2014

Dr. Tan Sian Kong receiving award for ASEAN YIA 2014

All winners of NHAM 2013 from Sarawak General Hospital Heart Centre/CRC Kuching

All Malaysian YIA at AFCC 2014

All ASEAN YIA at AFCC 2014
News & Events

8th NCCR 2014

Mark your calendar!
Join us at the 8th National Conference for Clinical Research.

Overview
Research matters in healthcare because it is the essence of good medical practice to know what interventions work based on credible evidence. Research also shapes policy and determines better healthcare management with increasingly limited resources. Research outcomes matter to stakeholders, clinicians, researchers and ultimately patients.

The 8th National Conference for Clinical Research 2014 (NCCR 2014) will look at research from a cross-disciplinary perspective to examine how it can contribute towards reshaping the future of healthcare. In collaboration with the Clinical Research Centre, Ministry of Health Malaysia, NCCR 2014 will bring together key speakers to share their experiences with research and practice, as well as to exchange ideas.

NCCR 2014 will be launched by YB Datuk Seri Dr S Subramaniam and YBhg Datuk Dr Noor Hisham Abdullah.

YES! The Research Poster Competition and Young Investigator Award is ON. Abstract submission will be opened soon. More information will be released shortly.

See you in Kuching, Sarawak!

For more details, please visit the conference website at:
www.nccrconference.com.my

Greetings from all of us in CRC
Selamat Hari Raya Aidilfitri

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You are welcome to contribute
To contribute (news & event, publication, article of interest, etc), please call us or email to simktg@crc.gov.my or ireneg@crc.gov.my

Announcements

KUCHING
1: Questionnaire Validation & Development Workshop
Date: 20 - 21 August 2014

2: Introductory of Biostatistics & Sample Size Workshop
Date: 27 - 28 August 2014

3: Intermediate Biostatistics & Sample Size Workshop
Date: 3 - 4 September 2014

Facilitated by: Mr Mohamad Adam Bin Bujang (Biostatistician from CRC National)
Venue: ICT Lab, Level 1, Heart Centre, Sarawak General Hospital, Kota Samarahan
Contact person: Nur Sara Shahira Abdullah
Email: nursara_shahira@yahoo.com.sg
Tel: 082 267820  Fax: 082 276823

MIRI
6th Sarawak State Health Department Research Day 2014
Date: 12-13 August 2014
Venue: Seminar Room, Nurses Home, Miri Hospital
Contact Person: NS Teng Leh Hong
Email: tenglh@crc.gov.my
Tel: 085 413673  Fax: 085 413719

http://www.crc.gov.my/crcSarawak/