PRESS RELEASE
For immediate publication

MALAYSIAN AND CAMBRIDGE SCIENTISTS BUILD LARGEST GENETIC DATABASE OF ASIAN BREAST CANCERS

The Malaysian team behind the Genomics study. Seated, from L-R: Professor Pathmanathan Rajadurai, Consultant Pathologist at Subang Jaya Medical Centre (Lead Pathologist), Professor Datin Paduka Dr Teo Soo Hwang, OBE, Chief Scientific Officer, Cancer Research Malaysia (Lead of the Genomics Study), Professor Emeritus Dato' Dr Yip Cheng Har, Consultant Breast Surgeon at Subang Jaya Medical Centre (Clinical lead), along with the Cancer Research Malaysia team involved in the Genomics study.

KUALA LUMPUR, 13 JANUARY 2021 – Together with the University of Cambridge and Subang Jaya Medical Centre, Cancer Research Malaysia has built the largest genetic and genomic database of Asian breast cancers to date.

Previously, the majority of characterised genomes (the sum total of an organism's DNA) used in breast cancer research were from Caucasian women – less than 5% came from Asians, even though Asians make up more than half of the world's population.

"Genomic information enables us to be more precise in diagnosis, as well as choosing the right treatment for the right patient. It is critical for us to close the gap in Asian genomic research, otherwise we may miss important genetic information that may be rare in Caucasians, but common in Asians. Through our study, we discovered that Asians are at higher risk of an aggressive type of breast cancer, are more likely to have a mutated TP53 gene, and have an enriched immune tumour profile. Our publication opens the door to improving precision medicine for Asian breast cancer patients," said Professor Datin Paduka Dr Teo Soo Hwang, OBE, Chief Scientific Officer at Cancer Research Malaysia, who led the study.

The study published in the prestigious Nature Communications science journal, was a collaboration between Cancer Research Malaysia, Professor Carlos Caldas and Dr Suet-Feung Chin from the Cancer Research UK Cambridge Institute, University of Cambridge, Professor Pathmanathan Rajadurai and Professor Emeritus Dato' Dr Yip Cheng Har from Subang Jaya Medical Centre.

The genomic sequences of 560 breast cancer tumour samples were analysed and it was discovered that the aggressive subtype that expresses the HER2 protein is more common in Asian women compared to Caucasians.

“The HER2 subtype of breast cancer is one of the most aggressive, and it is becoming clear that the risk factors may be different from other types of breast cancer. Our study highlights that Asians have a higher risk of this type of aggressive disease and underscores the need to do more research in Asians so that we can save more lives,” said Professor Emeritus Dato' Dr Yip Cheng Har, Consultant Breast Surgeon at Subang Jaya Medical Centre, Ramsay Sime Darby Healthcare.

The research also showed that the TP53 gene - often called the “guardian of the genome” because it protects normal cells from becoming cancer cells - is more commonly altered in Asian breast cancers compared to that of Caucasians.

“TP53 is frequently mutated in the more aggressive hormone negative breast cancers in Caucasian women. In Asian breast cancer patients, we observe an increase in TP53 mutations in hormone receptor positive cases and is associated with poorer survival,” said Dr Suet-Feung Chin, Senior Research Associate at the University of Cambridge, who co-led the study.

"We've also observed that Asian breast cancers are more likely to have immune cells present, and this suggests that if we can find some way to lift the invisibility cloak that cancers have to evade detection by the immune system, we may be able to improve survival for Asian breast cancer patients," said Dr Pan Jia Wern, the study's first author and the Deputy Head of Bioinformatics at Cancer Research Malaysia.

The researchers noted that this genomics map has enabled new thinking about the treatment of breast cancers in Asians. For example, a new clinical trial to test immunotherapy in Asian breast cancer patients has already started in July 2020, led by Cancer Research Malaysia, in partnership with oncologists at Universiti Malaya and National University Hospital Singapore. But more can and should be done.

"Today marks an important milestone in our mission to save lives through research in Asians. We aim to continue to ensure that genomics research is more diverse and inclusive so that all populations can benefit from the advances in technology," said Professor Datin Paduka Dr Teo Soo Hwang.

The team at Cambridge was led by Dr Suet-Feung Chin and Professor Carlos Caldas, where excellent core facilities enabled the extensive genomic profiling done. Professor Caldas said, “We were delighted to participate in this important study, which I called the Asian METABRIC, since it parallels our efforts to extensively characterise breast cancer and stratify tumours into one of the 11 Integrative Clusters.”

The study was supported by research grants and charitable funding from the UK Medical Research Council via the Newton-Ungku Omar Fund, Scientex Foundation, Yayasan Sime Darby, Yayasan PETRONAS , Cancer Research UK and Estee Lauder Group of Companies. Read the study here https://www.nature.com/articles/s41467-020-20173-5.

We hope more organisations and Malaysians will keep this lifesaving research going. **There is still so much more to be done to ensure the fight against cancer doesn't miss Asians - especially Malaysians** – from risk prediction to finding solutions for other types of cancers more common in Asians. Join Cancer Research Malaysia in the fight against cancer! If you're an individual, it only takes RM10/month to help save lives, and if you're a company, RM100/month can make a difference for Asian cancer patients. Donate at cancerresearch.my/donate

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About Cancer Research Malaysia

Cancer Research Malaysia is the only non-profit organisation in Malaysia dedicated to saving lives through impactful research focusing on the Malaysian population and communities across Asia. Our research has already led to the discovery and implementation of new and effective breast cancer prevention strategies and our priority is ensuring that Asians are not left out in the fight against cancer. Together with our partners and supporters, Cancer Research Malaysia's vision is a future free of the fear of cancer. Funding for our lifesaving research depends on donations and sponsorship from the public and corporations. For more information, please visit www.cancerresearch.my or follow us at:

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