VICTORIAN CENTRE FOR BIOSTATISTICS ViCBiostat

Victorian Centre for Biostatistics

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Thursday 26th July 2018

9.30am to 10.30am
Monash University, Dept of Epidemiology and Preventive Medicine
Conference Rooms 1 & 2, Ground Floor, 553 St Kilda Rd, Melbourne

Big ICE FALCON: a causal inference model based on twin or sibling data, and its relationship to Mendelian Randomization

Dr Shuai Li
Centre for Epidemiology and Biostatistics
The University of Melbourne

Whether associations found by observational studies are causal, and in which direction, are important issues with clinical and aetiological implications. We have developed ICE FALCON (Inference on Causation from Examination of Familial Confounding), an analytical approach to make inference about causation using data of twin or other sibling pairs. Analyses show that ICE FALCON gives the same conclusion as that from Mendelian Randomization (MR), an established and commonly used statistical method that relies on certain assumptions and genetic data. Resembling a bidirectional MR with the co-twin acting as a surrogate instrumental variable, ICE FALCON has some major advantages over MR, including not relying on measured genetic data and more broadly for the trait of interest. This talk will introduce the latest developments of ICE FALCON, its applications to longitudinal twin studies of body mass index (BMI) and to observational DNA methylation associations with BMI and smoking, and its comparison with MR.

Dr Shuai Li is a Research Fellow at the Centre for Epidemiology and Biostatistics, The University of Melbourne. He submitted his PhD investigating DNA methylation and breast cancer risk factors using twin and family studies in March 2018 at the same Centre. He has recently been awarded a Cancer Council Victoria Postdoctoral Research Fellowship. His research interests include genetic and epigenetic epidemiology.

www.vicbiostat.org.au

ViCBiostat *is a Centre of Research Excellence in biostatistics initially funded by Australia's National Health & Medical Research Council (NHMRC). The Centre is a collaboration between biostatistical researchers at the Murdoch Children's Research Institute, the Department of Epidemiology & Preventive Medicine at Monash University, and the Centre for Epidemiology & Biostatistics (CEB) at The University of Melbourne.*

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