OPEN ACCESS

Ology Press

Proceeding

Advances in Cardiology and Cardiovascular Disorders

Comparison of genetic risk factors in young onset myocardial infarction versus old onset myocardial infarction - a pilot study

Ajit S Mullasari,[1] Nandhakumar Vasu,[1] VL Ramprasad,[2] Sangamitra Mishra[2]

[1]Department of Adult Cardiology, Institute of Cardio Vascular Diseases, The Madras Medical Mission, Chennai, India

[2]MedGenome Labs Pvt. Ltd, Chennai, India

Correspondence: Nandhakumar Vasu, Department of Adult Cardiology, Institute of Cardio Vascular Diseases, The Madras Medical Mission, Chennai 600037, India, Email nandhacard2013@gmail.com

Received: November 10, 2017 | **Published:** November 14, 2017

Myocardial infarction (MI) mainly occurs in patients older than 45, yet considerable number of young men or women suffer from MI. Among Asians in general and particularly in Indians, there has been a rise of young onset myocardial infarction (YOMI) recently. Existing risk prediction models incorporate information about age, sex, and clinical history to calculate the probability of developing MI. However, current risk assessment algorithms do not explicitly incorporate information about the patient"s genetic risk because concern exists regarding the validity of generalization of these predictors to all populations. Genetic risk scores (GRS) based on multiple single nucleotide polymorphisms (SNPs), can have promising outcomes for MI. Tada et.al.had recently designed and validated an effective method of scoring the predictive genetic risk for coronary heart disease by using 50 known markers/ SNPs to calculate the GRS. It could be particularly useful in young individuals (≤ 40year old) with borderline MI risk and for individuals whose established risk-based treatment decision is uncertain.In a previous study, among the 33 genetic variants, 8 were associated with cholesterol (e.g.: PCSK9, LPA & LDLR), two with hypertension and 23 were not associated with known risk factors.The genetic variants which were already established in Tada et al study can be applied in our population of both YOMI and old onset MI (OOMI). If there will be a significant difference of one or more genetic variation (SNP) in YOMI when compare to OOMI, then identifying the molecular pathway for that particular SNP will reveal the genetic reason for YOMI. So we decided to compare the genetic variation in YOMI and OOMI groups.

The objective of the research was to compare the 50 SNPs scored for genetic risk prediction by Tada. et.al. in YOMI≤ 40 years and OOMI > 40 years.

Analysis was performed by dynamic array integrated fluidic circuits (IFCs), Fluidigm, will be used to genotype 50 SNPs, known to be associated with cardiovascular risk. This system uses TaqMan chemistry to detect SNPs in given DNA sample. 29 YOMI and 69 OOMI patients were recruited into the study till now. Statistical analysis will be done using regression analysis, p value estimation and chi square test.

In conclusion this ongoing study will throw lights on pathophysiology of YOMI and how to risk stratify the YOMI patients in a better way using genetic risk prediction.

Citation: Mullasari AS, Vasu N, Ramprasad VL, Mishra S. Comparison of genetic risk factors in young onset myocardial infarction versus old onset myocardial infarction – a pilot study. *Adv Cardiol Cardiovasc Disorders*. (2018);1(1):48.