**Title of research work for which Sun pharma research award is claimed :**- Use of Smartphone and Advance Computational Sciences (Artificial Intelligence/Machine Learning) in cardiovascular sciences.

1. **Use of smart phone in cardiovascular sciences:** - With growing importance of technology in medical sciences it is felt that busy hospitals can be unburdened and patient’s life can be made more convenient if technologies around telemedicine and tele-monitoring are developed. We have been working with technology companies in both creating as well as researching on the importance of smartphone applicability in cardiovascular sciences. We have studied that immediately following the discharge of patients with acute coronary syndrome/ international procedures from the hospital require more intense interaction with the health care system within the first two weeks. This when done remotely by a smartphone-based applications(Health Radar -Evolko Inc.) can be highly useful when seen on the parameters of higher satisfaction rate among patients, better compliance to medication and better control of risk factors like hypertension. Moving further we are trying to study similar applications of heart failure and other areas of cardiovascular sciences



1. **Use of artificial intelligence(AI) in prediction of cardiovascular disease: -** Traditional risk scoring systems for cardiovascular disease suffer from many biases like there non reliability in people from Indian Subcontinent. They also consider fewer risk factors that the influence the development of country artery disease and its complications like myocardial infarction. Age is given over weightage and non-conventional risk factors like oral tobacco consumption are completely omitted. We have been working with an artificial intelligence-based cardiovascular disease risk score (AICVD) and have been comparing its efficacy to other commonly used scores in young patients of acute coronary syndrome of our own country. We studied patients who had developed acute coronary syndrome at or before the age of 40 and applied various conventional risk scores like WHO/ISH, Framingham risk score and QRISK3 scores and compare them to AICVD score. We saw that most of these patients were classified as high to moderate risk by the AICVD score while they were classified as low-risk by other conventional scoring system. This is a continuing research in which we are trying to compare this data with a much larger control group as well as applying it prospectively to those patients in whom acute coronary syndrome has not yet developed to understand the efficacy of this AI based risk scoring system in a better way.



