

Huge increase in diabetes rates in rural Tamil Nadu within 15 years – New findings from the Madras Diabetes Research Foundation/University of Dundee ‘TREND’ Rural diabetes project

Chennai | February 25th, 2020: In order to study the current status of diabetes in rural Tamil Nadu, the **Madras Diabetes Research Foundation (MDRF)** and the **University of Dundee** have taken up a joint research collaboration to screen 15,000 people in 25 selected villages in Kancheepuram district of Tamil Nadu. The programme called is the **TREND (T***elemedicine p***R***oject for s***cre***ENing D***iabetes and its complications in rural Tamil Nadu)** project has already screened over 8000 people till date. Headed by **Professor Colin NA Palmer**, Associate Dean for Research and Chair of Pharmacogenomics, School of Medicine, University of Dundee, Ninewells Hospital and Medical School, Dundee and **Dr.V.Mohan**, Chairman and Chief Diabetologist – Dr Mohan’s Diabetes Specialities Centre and Director MDRF, the TREND project focuses on finding the burden due to diabetes and its complications in rural Tamil Nadu and providing novel solutions for its management.

In 2017, the National Institute for Health Research (NIHR) of the Department of Health, UK funded the **Madras Diabetes Research Foundation (MDRF)** and the **University of Dundee**, Scotland to take up the **IN***dia-S***cotland P***artnership for p***R***ecision m***E***dicine in D***iabetes (INSPIRED)** project. This project aims to develop a strategic plan of research and collaboration in diabetes. The resultant breakthroughs aim to achieve multiple goals namely, develop a large-scale Scotland clinical partnership to combat diabetes in India, work on understanding the heterogeneity of diabetes in India, develop innovative new tools and big data science to facilitate low cost diabetes screening in India and implement next generation precision telemedicine in India. Twelve Ph.D students have been registered so far under this programme with 9 students from the University of Dundee and 3 student from University of Madras. The TREND project is part of the overall INSPIRED program.

Elaborating his experience in the project, **Professor Colin Palmer, Associate Dean for Research and Chair of Pharmacogenomics, School of Medicine, University of Dundee, Ninewells Hospital and Medical School Dundee** said *“On behalf of the University of Dundee, we are extremely glad to be associated with Madras Diabetes Research Foundation with Dr.V.Mohan and his team to have worked on this breakthrough project emphasizing the need to have Telemedicine as the most desirable solution for screening and treating rural population in India. The aim of this research is to improve the health of patients and public in low and middle-income countries like India. This four-year Indo-UK collaborative project has me, Prof Colin Palmer from the University of Dundee as the Lead from UK and Dr.V.Mohan and colleagues from MDRF as the lead from India. We have found that risk factors that drive early onset diabetes in South Asian and white Europeans differ markedly, suggesting that the etiology of type 2 diabetes differs markedly across these two ethnicities”*.

Leading the Indian team of researchers from MDRF, **Dr.V.Mohan, Chairman and Chief Diabetologist – Dr. Mohan’s Diabetes Specialities Centre, Director and Chief - MDRF** commented *“In the TREND study we observed that the prevalence of diabetes in rural Tamil*

Nadu has increased from 4.9% in 2006 in the Chunampet Rural Diabetes Prevention Project (CRDPP) to 8% in 2011 in the ICMR- India Diabetes (ICMR-INDIAB) study in Tamil Nadu to 13.5% now in the TREND project representing a nearly threefold (300%) increase in diabetes prevalence in rural Tamil Nadu within 15 years. During the same period obesity rates also increased markedly. The mean body mass index (BMI) was 21.0 kg/m² in 2006 which increased to 22.0 kg/m² in 2011 in the ICMR-INDIAB study and to 25.0 kg/m² now in the TREND study. We utilized telemedicine technology in the 25 villages that were selected from Cheyyur taluk, Kancheepuram district of Tamil Nadu state. So overall early and timely screening for diabetes and pre-diabetes, prevalence of hypertension and obesity, screening diabetic complications in eye using retinal images, foot and kidney as well as assessing diabetes control among individuals etc. were carried out through this project.”

Awareness, diagnosis regular checkups and other ways of preventing as well as treating NCDs especially Diabetes, are very low among the rural sector. Through the TREND project, the **Madras Diabetes Research Foundation (MDRF)** and the **University of Dundee** aims to address these challenges with innovative use of technology that will enable even remote areas gain access to quality medical diagnosis and care.

Another novelty of the INSPIRED project is the use of retinal images to predict future risk of not only diabetic complications, but also other diseases like future heart disease, stroke and even dementia. This is one of the first such projects to be carried out in India and was possible due to the novel software called **VAMPIRE (Vascular Assessment and Measurement Platform for Images of the REtina)** led by the Universities of Dundee (Prof E Trucco) and Edinburgh (Dr T MacGillivray).

About Dr. Mohan's Diabetes Specialties Centre: Dr. Mohan's Diabetes Specialties Centre is a diabetes specialty chain founded in the year 1991 headquartered in Chennai, Tamil Nadu. It is India's diabetes care provider offering comprehensive services for diabetes patients. Dr. Mohan's Diabetes Specialties Centre now has 53 Diabetes centres and clinics in India and over 4.5 lakh diabetic patients have been registered at these centres. IT specializes in Total Diabetes care, Diabetes Eye Care, Diabetes Food Care services, Diabetes Cardiac Care, Preventive Care, Diet counselling and an advanced Laboratory.