Significant increase in serum TC, TGs, LDL-C and decrease in HDL-C levels were noted in subjects with having risk factors for CAD. A similar observation was made in subjects diagnosed with CAD with more profound alterations. This study also found traditional lipids still holding their position as significant risk indicators, and therefore a good target for currently prescribed lipid lowering drugs. The lipid ratios (TG/HDL-C, LDL-C/HDL-C & TC/HDL-C) could be used as indicators of IR, which is an important risk factor of MS and CAD. In large health surveys, it could be used to monitor trends in CV health.

Significantly high serum UA concentrations was observed in Hypertensives, Diabetics, hypertensive diabetics, dyslipidemias (risk factors) and those with CAD compared to the controls. UA was also higher in MS population compared to non MS. This re-established the claim that serum UA could serve as simple and economically viable CAD risk marker.

The novel cardiovascular risk factors Lp(a), Apo A1, Apo B and CLTI are found to be altered in CAD risk factors as well as CAD. A significant association between the novel cardiovascular risk factors Lp(a), Apo A1, Apo B and CLTI and traditional risk factors like BMI, BP, TC, HDL-C, LDL-C, TGs, VLDL-C was found. They also had a strong association with MS components. Each MS component on its own is a risk factor of CAD. With increasing number of components in an individual the risk further increases. This increase of risk was well marked by the increasing Apo B, Lp(a), CLTI and decreasing Apo A-I with addition of each component.

Apo B is a component of all atherogenic lipoproteins that include VLDL, IDL, LDL, and Lp(a) with each particle having one apo B molecule. Therefore, apo B can provide a direct measure of the number of atherogenic lipoprotein particles in circulation. So just the single request of Apo B would be able to adequately predict risk and/or its management with lipid-lowering therapy. In this study it was revealed that while many of the participants showed LDL ≤ 100 mg/dl but apo B was > 90mg/dl. The AUC of Apo B was greater than that of LDL. Sensitivity and specificity were almost at par with LDL-C. Further Apo B estimation method does not require a fasting blood sample contrary to Lipid profile. Therefore in this study Apo B appears...
be a better marker and the investigator proposes the use of Apo B routinely by clinicians.

Researches involving the predictive value of apolipoproteins A-I and B in atherosclerotic diseases have been reported. Plasma apolipoprotein A-I like B levels appears to re-establish the existing view as a good CAD marker in this study. The ratio of Apo B/Apo A can also prove beneficial in lipid lowering therapy to clinicians. apo B/apo A-I ratio represents a superior index for predicting CV risk as compared to other lipid ratios, such as TC/HDL-C and LDL-C/HDL-C.

Lp(a) is widely known as a genetic marker which is not affected by diet or physical exercise. Its levels are not easily altered; it is fully expressed in the first year of life, unlike dyslipidemias which do not present themselves until later in life. Besides the lipid levels are altered easily by many factors such as age, gender, endocrines, lifestyle etc. Therefore an early age screening of Lp(a) especially among children as well as adolescents having family history of premature CAD could prove to be of immense value in reducing CAD morbidity and mortality. The study also found that Lp(a) had very good clinical accuracy in ROC curve analysis, advocating strongly its use as a regularly requested test.

In this multimarkers study, it was observed that CTLI which is an index of total lipid burden in a person had the best clinical accuracy besides showing significant differences with control. CLTI more than 20000 mg/dl was prevalent in CAD group showing the high lipid burden in this group.

Although traditional lipids still hold a prime position as predictors of CAD, the novel markers including lp(a), Apo B, Apo A-I and their index (CLTI) could further aid in confirming the risk of CAD. Besides dietary modification, regular physical activity, weight reduction, avoiding smoking, alcohol and reducing stress levels is an urgent need.
Future Plans:
To explore and investigate the clinical and genetic relationship (single nucleotide polymorphism study) between levels of Lp(a) Apo A I and Apo B in subjects who present for a clinically indicated coronary angiogram as well as those presenting with CAD risk factors only.