CHAPTER-6

SUMMARY

1. A total of 564 individuals were screened and grouped into four groups; normal, preHTN, preDM and co-existing preHTN and preDM.

2. The prevalence of preHTN was reported as 29.79% , preDM as 17.55% and co-existing preHTN and preDM was reported as 17.02%. The prevalence rate of preHTN, preDM and their concurrent occurrence was higher among males compared to females.

3. Based on new BP criteria, given in 2017 the preHTN group was further categorized into two subgroups, elevated HTN (52%) and stage 1 HTN (48%).

4. LF/HF ratio and LF (nu) reported significant increase, indicative of sympathetic dominance and HF (nu) which represents the vagal activity showed a significant decrease in the co-existing group compared to individuals with isolated preDM and preHTN.

5. SD1 and SD2 evaluated using Poincare plot showed significant decrease representing decreased parasympathetic tone and overall variability in the co-existing group compared to individuals with isolated preDM and preHTN.

6. HRR evaluated using treadmill was significantly prolonged representing delayed parasympathetic reactivation after exercise among the co-existing group compared to individuals with isolated preDM and preHTN.

7. SBP, DBP, IFG and IGT were reported to have significant association with LF/HF ratio.

8. WC, BMI, TBF, VF, TC, TG, LDLc, arterial stiffness and NLR were important CV risk factors which showed significant increase in the co-existing group compared to other groups. They were significantly positively correlated with LF/HF ratio and QTc. The CV risk factors were significantly negatively correlated with SD1, SD2 and HRR. They proved to be the independent variables influencing the autonomic functions.

9. Physical activity was comparatively low among the co-existing group compared to other groups. Physical activity was proved to be significant independent variable affecting the autonomic functions.

10. Positive parental history of HTN and DM had significant association with development of sympathovagal imbalance, preHTN and preDM.

6.1 CONCLUSION

The present study reports that sympathovagal balance evaluated with the help of HRV and CV fitness assessed using HRR were significantly impaired in individuals reporting co-existing preDM and preHTN compared to subjects with isolated preHTN and preDM. Hereby, we suggest that CV risk factors like BMI, NLR, and arterial stiffness could provide a simple routine test that could help us to segregate the high risk candidates. Autonomic function assessment with HRV and HRR are simple discernible tools to detect the early autonomic changes, making them potential prognostic and diagnostic markers.

Targeting at the precursor stage; preHTN, preDM and especially the co-existing individuals, where drug therapy is not recommended, would be of great boon to the society to retard or inhibit the development of DM and HTN; which are considered as the important causes for global mortality and morbidity.