**CONCLUSION**

In the present study, we have used short-term HRV analysis of obese and control subjects to study the impact of obesity on ANS. We have used real and synthetic HRV data for analysis. The results of the study are presented using statistical tests and a machine learning algorithm. The statistical analysis shows the significant reduction in HRV parameters of obese subjects compared to control and machine learning algorithm was used to found important HRV predictor. The statistical results suggests an alteration in sympathovagal balance due to less parasympathetic activity. Further, this was confirmed using the CART and GBDTalgorithm, which showed a classification accuracy of 96.55% and 93.10%, respectively.