Chapter – 8

APPRAISAL

8 APPRAISAL

8.1 SUMMARY OF THE FINDINGS

Both per-protocol and ITT analysis demonstrated a significant group*time interaction effect for HbA1c at 6 months as well as at 1 year favouring the YBL group. The estimated decrease in mean HbA1c in the YBL group was 0.80 at 6 months and 1.25 at 1 year as compared to the PHE group. There was also significant group*time interaction effects for PPBS and DASS depression score at 1 year favouring the YBL group. The estimated decrease in mean PPBS in the YBL group was 37.75 as compared to the PHE group. The estimated decrease in mean DASS depression score in the YBL group was 1.45 at 1 year as compared to the PHE group.

ITT analysis showed the significant group*time interaction effects for BMI, T2DM medication score and blood pressure levels favouring the YBL group. The estimated decrease in mean BMI in the YBL group was 1.01 at the end of 1 year as compared to the PHE group. The estimated decrease in mean Medication Score in the YBL group was 0.87 at the end of 1 year as compared to the PHE exercise group. The estimated decrease in mean Systolic Blood Pressure in the YBL group was 6.78 mmHg at the end of 6 months and 10.73 mmHg at the end of 1 year as compared to the PHE group. The estimated decrease in Mean Diastolic Blood Pressure in the YBL group was 5.10 mmHg at the end of 6 months and 7.49 mmHg at the end of 1 year as compared to the PHE exercise group. The per-protocol analysis demonstrated the significant group*time interaction effects for FBS and DSSS stress score favouring the YBL group. The FBS reduced significantly at 6 months as well as at 1 year as compared to the PHE group. The DASS stress score reduced significantly only at 6 months as compared to the PHE group.

Out of 59 thermal imaging variables selected for the study, 29 variables showed significant negative correlations with the HbA1c level. Eight thermal imaging variables which have stronger correlation with HbA1c (Right Knee, Left Knee, Right Ankle, Left Ankle, Right Shin Average, Left Shin Average, Centre of Eyebrows, Right Eye) showed a significant increase in

temperature in the YBL group compared to PHE group at 1 year. A total of 11 EPI variables showed significant correlations with HbA1c. EPI Balance, Organs balance right, Organs balance left, Kidneys balance, Digestive system balance, Adrenals balance, Cerebral zone vessels balance, Cerebral zone cortex balance, Liver balance and Lumber spine balance showed significant negative correlation, and EPI Stress variable showed a significant positive correlation with HbA1c. Out of 11 EPI variables showing correlation with HbA1c, 7 variables (EPI Stress, Balance, Organs Balance Right, Organs Balance Left, Digestive System Balance, Adrenals Balance, and Cerebral Zone Cortex) improved significantly at 1 year in the YBL group compared to PHE.

8.2   CONCLUSIONS

Current study demonstrated that regular practice of yoga based lifestyle for one year leads to significantly better outcomes as compared to the physical exercise and health education programme in T2DM patients in following variables: HbA1c levels, postprandial blood sugar levels, depression scores, thermal imaging variables and electro-photonic imaging variables. Certain thermal imaging variables (negative correlation: centre of eyebrows, eyes, ears, knees, ankles and shins) and electro-photonic imaging variables (positive correlation: stress; negative correlation: balance, organs balance right, organs balance left, energy balance of kidneys, digestive system, adrenals, cerebral zone, liver and lumber spine) showed significant correlations with HbA1c levels.

8.3   IMPLICATIONS OF THE STUDY

The study will enable us to understand the efficacy of yoga-based lifestyle programme as an add on management strategy for Type 2 Diabetes Mellitus in terms of the physical, physiological, biochemical, thermal imaging and electro-photonic imaging parameters being

assessed. This study will also help us to understand the correlation if HbA1c levels with thermal imaging and electro-photonic imaging variables.

8.4 APPLICATIONS OF THE STUDY

The results of the study also suggest that yoga-based lifestyle could be an economic, feasible and effective add on therapy along with conventional treatment to improve HbA1c levels, altered thermal and energy patterns in patients suffering from type 2 diabetes mellitus. Present study provides some important leads for future researches that can explore validity and reliability of thermal imaging and electro-photonic imaging as screening tools for T2DM which may allow early detection of complications in T2DM.

8.5 STRENGTH OF THE STUDY

The strengths of current study include robust methodology, long term intervention, active control group, and the use of standardized and validated assessment tools and intervention protocols.

8.6 LIMITATIONS OF THE STUDY

Limitations include the single centric study, high attrition rates and possible confounding effects of the COVID-19 pandemic.

8.7 SUGGESTIONS OF THE STUDY

Future studies should examine the effect of yoga with much larger sample size and longer follow-up. Further much robust research in this area through large multi-centric trials is warranted. Future studies should confirm the association of HbA1c level to certain thermal imaging and electro-photonic parameters which assist to predict HbA1c levels by non-invasive methods.