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Effect of lifestyle modification and Metformin on Fetuin-A in metabolic syndrome

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Objective: To evaluate the effects of lifestyle modification and Metformin on Fetuin-A in Metabolic Syndrome (MetS) as defined in 2006 by the International Diabetes Federation (IDF).

Methodology: 40 MetS subjects were randomly assigned to treatment with Placebo (n=20) or Metformin (n=20) in addition to lifestyle modification for 12 weeks.

Results: All 40 participants completed the study. After 12 weeks, both groups had significant reductions in weight ($p<0.001$), body mass index (BMI) ($p<0.001$), waist circumference (WC) ($p<0.001$), systolic blood pressure (SBP) ($p<0.001$) and diastolic blood pressure (DBP) ($p<0.001$). The Placebo group also had significant improvement in fasting plasma glucose (FPG) ($p<0.001$) and C-reactive protein (CRP) (<0.05). Weight, BMI, WC, FPG, 2-hour postprandial glucose (2h-PPG), high density lipoprotein cholesterol (HDL-C), triglycerides (TG) and Fetuin-A in the Metformin group are decreased significantly compared to the Placebo group. Reduction of plasma Fetuin-A was significantly associated with TG in the Metformin group.

Conclusion: Lifestyle modification and treatment with Metformin for 12 weeks improved cardio-metabolic risk factors in MetS and reduced Fetuin-A levels. Further investigations are required to confirm the effects of lifestyle modification and Metformin after an extended follow-up period.

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