THE RELATION BETWEEN POSTPRANDIAL PLASMA GLUCOSE AND A1C LEVELS
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Background: Macrovascular complications in type 2 diabetes mellitus (DM) have been shown to be related with postprandial plasma glucose (PPG) rather than fasting plasma glucose (FPG) levels. FPG and A1c levels are used to monitor patients with DM. However, FPG do not always show strong correlations with A1c levels. The aim of this study is to evaluate the relation between PPG and A1c in patients with different A1c levels whose FPG levels are <100 mg/dL.

Materials and methods: Forty-five type 2 diabetic patients with FPG <100 mg/dL are divided into 3 groups whose A1c were 6-6.5%, 6.6-7% and 7.1-7.5%, respectively. PPG after breakfast (PPG-B), PPG after lunch (PPG-L), PPG after dinner (PPG-D) were compared among the groups and correlations between A1c and PPG after all three main meals were measured. Results: There were no significant differences with regard to age, diabetes duration, body mass index, lipid profiles and FPG among the three groups. All PPG’s were significantly different among the three groups (all p’s =0.001) being highest in the group with A1c 7.1-7.5% and lowest in the group with A1c 6-6.5%. A1c was strongly and positively correlated with PPG-B, PPG-L and PPG-D (Pearson correlation coefficients were 0.894, 0.907 and 0.867, respectively).

Conclusion: This study showed that there is a strong correlation between A1c and PPG in patients with type 2 DM and normal FPG. Therefore, besides FPG and A1c, PPG should be used in the follow-up of diabetic patients.