P78

Incretin secretion and glucagon responses to oral glucose tolerance test in newly diagnosed Thai type 2 diabetic patients

Dr Yotsapon Thewjitcharoen[1], Dr. Kuwata Hitoshi[2], Mr. Phawinpon Chotwanvirat[1], Ms. Soontaree Nakasatien[1], Professor Thep Himathongkam[1], Dr. Yabe Daisuke[2,3], Professor Seino Yutaka[2]
[1]Diabetes And Thyroid Center, Theptarin Hospital, Bangkok, Thailand, [2]Yutaka Seino Distinguished Center for Diabetes Research, Kansai Electric Power Medical Research Institute, Kobe, Japan, [3]Department of Diabetes, Endocrinology and Nutrition, Graduate School of Medicine, Kyoto University, Kyoto, Japan

Objective: This study aimed to examine the incretin secretion in newly diagnosed Thai T2DM compared with normal glucose tolerance (NGT) participants.

Materials and Methods: A total of 16 newly diagnosed Thai T2DM (onset of diabetes < 2 years) and healthy volunteers underwent 75 g OGTT and plasma glucose, insulin, C-peptide, glucagon, total GLP-1 and GIP level were determined.

Results: Newly diagnosed Thai T2DM (mean age 50.2±8.9 yrs, mean duration 6.1 months, BMI 26.8±3.5 kg/m2) displayed peak glucose at 60 mins compared with at 30 mins in NGT group (mean age 42.1±10.6 yrs, BMI 25.0±3.4 kg/m2). T2DM showed a rise in glucagon at 0-30 min. While median HOMA-IR were higher in T2DM (3.6 vs. 2.2, p=0.009), β-cell function assessed by 30 min insulinogenic index showed markedly lower in T2DM when compared with NGT group (0.4 vs. 1.1, p=0.001). Total GLP-1 levels were similar in both groups but GIP responses were significantly higher in diabetic patients especially at 30 mins following OGTT. Peak GLP-1 levels preceded the peak insulin response in both groups.

Conclusions: Although insulin resistance is the predominant patho-physiological defects in Caucasians, impaired insulin secretion play a major role in Thai diabetic patients same as East Asian patients. There was no significant difference in GLP-1 levels between T2DM and healthy control which was consistent with other studies in Asian population. However, GIP responses were enhanced in Thai T2DM. Further studies are needed to compare different underlying mechanisms among Asian countries in order to develop pathology-based treatment approaches in diabetes management.