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Liraglutide Increased IL-1RA Concentrations in Obese Type 2 Diabetes: A Small Randomized Controlled Trial

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Background: Therapy with exenatide, exendin-4-based glucagon like peptide-1 receptor agonist (GLP-1 RA) increased plasma interleukin-1 receptor antagonist (IL-1RA), an endogenous anti-inflammatory protein which protected pancreatic β cells independent of glycemic and weight controlled. We hypothesized that liraglutide, long-acting GLP-1 analogue might contribute to a potential protective effect on β cells in diabetes. Methods: Twenty-four obese patients with type 2 diabetes receiving oral hypoglycemic agents with insulin therapy, except pioglitazone or incretin-based therapy, were randomly assigned to receive either maximum tolerate dose of liraglutide (n=12) or standard therapy (n=12) for twelve weeks. Results: Among 24 participants who completed over 12 weeks of this study, median change was +258.7% (78.7, 656.6) and +101.0% (-3.3, 189.4) of IL-1RA; P<0.04, and -1.2% (-1.7, -0.8) and -0.4% (-1.0, 0.3) of A1c; P<0.03 in liraglutide and standard group, respectively. Percent changes of fasting plasma glucose, body weight, neck circumference and body mass index were all not statistically significant, when comparing between group. Pearson correlation between percent change of IL-1RA and percent change of A1c response to therapy were also not statistically significant. Conclusion: Liraglutide might have anti-inflammatory effect independent of the glycemic control during initial short-term duration. Keywords: Liraglutide, Interleukin-1 receptor antagonist, obese type 2 diabetes. Presentation: No date and time listed