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COMMENT ON DUTIA ET AL.

Limited Recovery of β -Cell Function After Gastric Bypass Despite Clinical Diabetes Remission. *Diabetes* 2014;63:1214–1223

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The article in this issue of *Diabetes* by Dutia et al. (1) shows that in obese diabetic patients returning to normal glucose tolerance (NGT) after gastric bypass β -cell function appears to recover if evaluated through oral glucose tolerance test (OGTT), but not if evaluated through isoglycemic glucose clamp. In fact, the plot indicating Δ insulin/ Δ glucose (insulin release [IR]) versus $1/\text{homeostasis model assessment of insulin resistance (HOMA-IR)}$ (insulin sensitivity [IS]) grows during OGTT, but stays flat or moves right, indicating only improvement of IS, during isoglycemic glucose clamp (1). Several years ago, we showed that when tested with OGTT, plotting of IR versus IS described different curves in NGT, impaired glucose tolerance (IGT), and type 2 diabetic (T2D) obese subjects (2). In addition, improving glucose metabolism after gastric banding (from IGT to NGT), the plot moved more to the right than upwards, indicating essentially improved IS accompanied by some increase of IR; in subjects who remained T2D, there was only a slight movement of the plot to the right.

At that time, we did not have data on patients experiencing reversal of T2D. After the article by Dutia et al., we went back to our data and examined through the same model (2) at baseline and after 18 months a total of 19 patients with presurgery T2D (eight NGT, five IGT, and

six T2D at 18 months). In the eight subjects going from T2D to NGT, IS moved from 0.19 ± 0.03 to 0.41 ± 0.08 ($P = 0.01$), while IR moved from 0.38 ± 0.05 to 0.30 ± 0.04 ($P = \text{NS}$). We think that, aside from very minor differences in modeling and in results, the data by Dutia et al., combined with our old (2) and present data, indicate that even in the presence of clinical resolution of T2D β -cell function does not fully recover. The differences after OGTT seem to be due to the incretinic effect, present with Roux-en-Y gastric bypass and absent gastric banding. This interpretation is supported by the different response observed by Dutia et al. (1) during OGTT and during isoglycemic glucose clamp.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

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