Insulin may have a role to play in protecting beta cells from deterioration in diabetes. Reply to Del Parigi A [letter]

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To the Editor: We thank Dr Del Parigi [1] for reminding us of the protective effect of insulin therapy on beta cell function. This is more evidence that we could have quoted in our recent ‘For Debate’ article [2] proposing that resting the beta cell is protective, and its corollary, that over-stimulation is detrimental.

Del Parigi supports his argument by referring to two studies in which short-term insulin therapy of newly diagnosed individuals with type 2 diabetes resulted in improved glycaemic control at 12 and 24 months post-treatment [3, 4]. He concludes by suggesting that insulin may have ‘a formidable role not only in long-standing and overly compromised patients with type 2 diabetes, but potentially also in newly diagnosed cases as a powerful means of achieving remission or a delay in the progression of the disease’.

While we agree that insulin therapy would have a protective effect on beta cells, we do not agree that insulin should be an early treatment for type 2 diabetes. Insulin therapy would be expected to result in increased weight [5] and blood pressure [6], and would expose the patient to the risk of hypoglycaemia. In fact, the UK Prospective Diabetes Study (UKPDS) showed that newly diagnosed patients with type 2 diabetes who were treated with insulin had increased weight gain and hypoglycaemic events, while glycaemic control (HbA_{1c} levels) was similar to that achieved in patients treated with sulfonylurea or metformin [7]. There are other medications that lower blood glucose

without stimulating the beta cell, including metformin, the glitazones (pioglitazone and rosiglitazone), acarbose and orlistat. In addition, agents that increase glucagon-like peptide 1 action and stimulate insulin secretion in the presence of hyperglycaemia, such as exenatide and the dipeptidyl-peptidase IV inhibitors (citagliptin and vildagliptin), also have independent beta cell protective effects [8], mitigating any detrimental effects of their stimulatory action.

It is time to rethink the order in which we use medications after diet and exercise no longer control the hyperglycaemia of type 2 diabetes, but we do not believe that insulin should be considered as an early therapy.

Duality of interest The authors declare that there is no duality of interest associated with this manuscript.

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