In the treatment of persons with T2D, the control of hyperglycemia is one of the main objectives, and an effective way to reduce and delay the onset of either microvascular or macrovascular impairments. At present, we count with several approaches, several drugs and different therapeutic antihyperglycemic guidelines, which we have to adapt in a customized manner to each of the persons with T2D taking into account their age, the hyperglycemia level, the evolution of the disease, the associated comorbidities and the social and personal situation. Though the basis of the initial treatment of the T2D is constituted by the changes in the lifestyle that incorporate a nutritional treatment and the increase of physical activity, together with the oral medication, in certain situations the administration of insulin is required in order to achieve an adequate control.\(^1\)

On one hand, the use of insulin is recommended when a metabolic decompensation takes place, if there are clear symptoms of hyperglycemia or if the levels of glycemia or HbA\(_1c\) are very high. On the other hand, the insulinization will be necessary when the glycemic control objectives are not achieved with other treatments. Clinical guidelines recommend the starting of insulin therapy adding a single dose of intermediate insulin or slow analogue with later dose adjustment. However, the use of two doses of premixed insulins proved to yield better results regarding the improvement of the HbA\(_1c\), and the postprandial glycemia.\(^2\) For this reason, it is recommended to consider the guideline of two injections of premixed insulin of 8.5-9% in these cases. Premixed analogues should be used rather if injections immediately before the meals are preferred, if the hypoglycemia are an important risk for the patient or if the postprandial fluctuations of the glycemia are very marked.

Moreover, starting insulin administration suggests starting a structured diabetes education that includes frequent self-analysis and self-control for an adequate adjustment of the dose. If after the beginning of the insulin therapy with slow or intermediate insulin and the later increase of the dose, the HbA\(_1c\), objectives are
not achieved, there are two options in the insulin therapy intensification: to evolve to a basal bolus guideline, adding a dose of a fast analogue to the considered meals, or to change the guideline to premixed insulins in multi-doses, generally before breakfast and before dinner. This last guideline might be easy to understand and to carry out by the majority of the patients with T2D with which an adequate control is achieved in more than half of the cases, without differences as regards to the number of hypoglycemias or other adverse effects. On the other hand, the guideline with premixed insulins might provide a better life quality compared to the basal bolus guideline.

The usual guideline of two daily doses of premixed insulins before the breakfast and dinner might intensify itself if considered necessary adding a new dose before lunch, achieving an improvement of the HbA1c, increasing the risk of mild hypoglycemias only moderately, which in any case are kept at low levels. The mixtures of insulin have also proved their efficacy in hospitalized patients, achieving a similar glycemic control to the basal bolus guideline without differences in the hypoglycemia’s incidence. At the hospital, they might constitute a very flexible tool to reach an adequate metabolic control in changing situations, as the concomitant treatment with corticoids in variable doses.

To sum up, the premixed insulins are an efficient option, as well as safe and very useful in patients with T2D who require insulin due to a metabolic decompensation, or who need the intensification of the previous treatment guideline with other antidiabetic drugs or with slow or intermediate insulin.

**Declaration of potential conflict of interests**

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**References**