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Palliative Care and Type II Diabetes: A Need for New Guidelines?

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Abstract

Since the publication in 1998 of the articles by the UK Prospective Diabetes Study (UKPDS) group, guidelines for the management and treatment of type II diabetes have been standardized. When applied to an end-of-life population, these international recommendations do not have any scientific justification and go against quality-of-life goals promoted by hospice and palliative care. The aim is to demonstrate this in the current article.

Keywords

palliative care, diabetes mellitus type 2, clinical trial, hospice care, hyperglycemia, diabetes

Introduction

The questions here arise from the following observation: in a number of hospital palliative care units, where the average life expectancy of patients is less than 3 months, diabetes patients are managed according to criteria that seem to us scientifically irrelevant. Indeed, we have observed an overall increase in the number of diabetic patients being treated using a standard approach in accordance with current health practices. While systematic screening for this disease and strict control of glycemia are obviously justified in the general population, applying these diabetes guidelines as they stand to end-of-life patients has no scientific justification and goes against the quality-of-life goals for these patients. We will attempt to demonstrate this below.

Major Landmark Studies in Modern Diabetology

Several studies have made a significant contribution in terms of establishing current guidelines regarding management of type II diabetic patients, with the UK Prospective Diabetes Study (UKPDS) 33 and 34 studies forming the cornerstone of this research. When these are analyzed with terminal care specifically in mind, it seems fairly clear that applying these results to a population with a very limited life expectancy is inadequate.

- The UKPDS 33 study looked at the correlation between the risk of micro- and macrovascular complications and intensive control of glycemia with sulfonylurea or insulin, versus "conventional" treatment.[1] It should be stressed that this conventional treatment consisted initially of dietary modifications only. Hypoglycemic agents were added only when a hyperglycemic symptom appeared or when fasting glucose was greater than 15 mmol/ L (270 mg/dL). As for the so-called intensive treatment, the goal was a fasting glucose level of 6 mmol/L (108 mg/dL) in the case of sulfonylurea-based treatment. In the case of insulin therapy, the goal was a preprandial glucose level lower than 7 mmol/L (126 mg/dL).
- The UKPDS 34 study investigated the benefits of adding metformin for obese diabetic patients.[2]
- The results for the UKPDS 33 study were a decrease, in the case of intensive treatment, in the risk of microvascular complications. However, the assessed risk of macrovascular events and the mortality rate did not go down. It was only in the case of obese patients treated with metformin that a significant drop in the mortality rate was recorded (UKPDS 34). A doctor caring for end-of-life patients will notice that there was, indeed, no significant drop in diabetes-related complications in the first year of treatment. The number of patients that need to be treated to avoid 1 single event over a 10-year period was 19.6 (95% CI 10-500). The interval of time during which there were no complications in newly diagnosed patients was 14 years in the case of an intensive treatment versus 12.7 years in the case of a "conventional" treatment (time interval criterion = 50% of patients having had at least 1 event). It should also be

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stressed that intensive treatments, in particular insulin, increased the risk of hypoglycemia. If guidelines for palliative care are going to take the UKPDS studies into account, should they not be recommending, contrary to the curative guidelines, the so-called "conventional" treatment standard: a fasting glucose level of 15 mmol/ L (270 mg/dL) or an undesirable symptom secondary to hyperglycemia, before considering a hypoglycemic treatment?

- The Action to Control Cardiovascular Risk in Diabetes Study (ACCORD) study assessed the benefits obtained in terms of macrovascular events by aiming for a glycated hemoglobin level (HbA1) for diabetic patients lower than 6% compared to the 7% to 7.9% level permitted in the control arm.[3] After 3.5 years of investigation, the arm of the study involving strict control of Hb levels had to be stopped, because an increase in the mortality rate had indeed appeared. The moral in this case is therefore "the best is the enemy of the good," and it is important to stress that this applied to a population where life expectancy was of an order of years rather than weeks.
- In the Action in Diabetes and Vascular Disease: Preterax and Diamicron Controlled Evaluation (ADVANCE) trial, the group that benefited from intensive treatment showed a decrease in the overall number of micro- and macrovascular events.[4] No objective difference in mortality rates was established. These overall positive results were mainly due to a gain in the area of renal microvascular events. Indeed, a relative decrease in risk of 21% was recorded in this subgroup in comparison with the control group. The average HbA1c level at 5 years was 6.5% in the intensive group and 7.3% in the control group. But once again, positive results did not appear until a period of at least 24 months had elapsed.
- Other studies, such as Steno-2 Study have concluded that to obtain better results for comorbidities associated with type II diabetes, it is necessary to combine strict control of glucose levels with intensive therapeutic management of the other morbidity factors such as cholesterolemia and high blood pressure.[5] However, as far as palliative care is concerned, would any carers be concerned about hypercholesterolemia? And hence, why should such a different logic be applied to diabetes?

A more critical point of view is essential with regard to the blind application of general good practice standards. Indeed, once life expectancy is of the order of a few weeks or months, it is no longer relevant to treat a patient with drugs where the period it takes for therapeutic effect is much greater than the life expectancy of the patient. This applies to an even greater extent when the treatment in question causes discomfort for the patient: insulin injections, glycemia checks at untimely moments, the risk of hypoglycemic episodes that are so feared by patients, etc.

Conclusion

Current practices deserve to be challenged by these palliative care-focused considerations. Indeed, it seems that when faced with diabetes, caregivers have a tendency to overmedicate. There is then a risk of undermining the basic tenets of palliative care: comforting patients as much as possible and giving support to patients with humanity at the end of their lives, to provide each and every one with the best quality of life. Rational guidelines, provided to everyone concerned in palliative care, must contribute to these fundamental goals.

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