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EDITORIAL

Primary care physicians and insulin initiation: Multiple barriers, lack of knowledge or both?

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Primary care physicians (PCPs) provide diabetes care for 82% of patients with type 2 diabetes (1). Many patients with type 2 diabetes will eventually need insulin. The UKPDS (2) showed that ß-cell failure is progressive. From 50% of normal ß-cell function present at diagnosis, there is a steady decline with almost complete loss of ß-cell mass within 10-15 years, even earlier in some patients. On average, as many as 40-80% of patients with type 2 diabetes will need insulin within 10 years after diagnosis (1,2). These statistics can vary between patients and depending on the different agents used after the initial diagnosis. UKPDS did not include thiazolidinediones or GLP-1 based therapies, which could potentially have a completely different effect on the ß-cells and perhaps delay the need for insulin.

Since many patients with type 2 diabetes need insulin at some point, and since most of these patients are under the care of a PCP, initiation of insulin therapy should be part of the daily routine in any PCP practice. However, it is not surprising to me that "…the initiation of insulin is one of the most difficult aspects of managing my patients with type 2 diabetes." This statement comes from two thirds of primary care physicians (PCPs) surveyed in the study by Hayes et al (3). In this issue of the *International Journal of Clinical Practice,* Hayes et al (3) surveyed 505 primary care physicians practicing in the United States. The survey was done via an internet site and included a demographic assessment, a question about glycemic goals and 30 belief items related to different aspects of insulin therapy. Most PCPs agreed that the benefits of using insulin to prevent or delay complications outweighed the risks of hypoglycemia and weight gain for most patients. They also agreed that a major barrier to initiating insulin was the patients' fear and reluctance. However, there was a clear dichotomy when it came to the belief that most patients would need insulin at some point raising the question of whether PCPs truly understand the progressive decline in ß-cell function. Much more alarming was the question related to insulin metabolic effects; 35% of respondents believed that insulin

therapy would increase the risk of cardiovascular events; 33% were neutral and only 32% of the total group disagreed.

Difficulty in initiating insulin therapy in patients with type 2 diabetes is a two-fold problem because of patients' related barriers and PCPs' lack of knowledge and resources.

Patients have many concerns regarding insulin (4); one of the justifiable concerns is hypoglycemia, but for many, the major concern is related to the misconception that insulin could lead to more complications. In many patients' minds, insulin is linked to hemodialysis or leg amputation or terminal illness. This misconception stems in part from many physicians' reluctance to start insulin until their patients are maximized on oral agents and have reached an advance stage of uncontrolled hyperglycemia where complications are already overt. Many physicians also threaten their patients with insulin, creating feelings of personal failure or "doom" if insulin is initiated (5). Patients also want to avoid injections because in their mind, injections can be painful and difficult to do. Some may also see insulin injections as a social stigma.
To overcome all these patients' fears and misconceptions, teaching and education are paramount, especially at the time of diagnosis. In my opinion, all patients with newly diagnosed type 2 diabetes must attend individual or group education classes run by certified diabetes educators. They need to understand their disease, the natural history, the probable need for insulin at some point, the benefits of insulin therapy and the ease of injections now provided by pen devices and small needles. Understanding all these concepts make the transition to insulin much easier for most patients and physicians. However, even if patient barriers are lifted, we still have another major problem: PCPs' lack of knowledge when it comes to insulin therapy.

Few studies have looked at factors that contribute to physician reluctance to initiate insulin therapy. An international survey of over 3600 nurses and doctors in 13 countries revealed that clinicians who delay initiating insulin therapy have also delayed initiating oral medication, and that specialists and opinion leaders were less inclined than PCPs to delay starting insulin (4). US physicians were more likely to delay insulin, compared to physicians from 11 other countries. Riddle (6) noted the underuse of insulin in North America and pointed appropriately that some PCPs still worry that insulin therapy may promote insulin resistance or increase the risk of cardiovascular events; both being a major concern for many PCPs in the survey by Hayes et al (3). These beliefs are largely unfounded based on current evidence (7) and probably are the result of lack of knowledge. Similar problems related to insulin initiation affect practices of family physicians. A survey (8) of family physicians and patients regarding different aspects of insulin therapy showed that the physicians' knowledge was low and many had misconceptions of patients' fears, all contributing to a major delay in initiating insulin. Although specialists (endocrinologists, diabetologists) are less prone to clinical inertia in response to inadequate glycemic control, and are much more aggressive than PCPs in initiating insulin, one study showed that fewer than one-half of patients with high A1c levels had intensification of their medications, regardless of their physician (9). The major differences between specialists and PCPs are mostly the closer and better focus to diabetes issues during patients visits to a specialist clinic. The whole visit revolves

around diabetes as opposed to PCPs who have to take care of other medical issues during a similar time slot. Specialists also have better and easier access to patient education resources (certified diabetes educators, diabetes education classes, dieticians), which provide a major help in insulin initiation, titration and attainment of better glycemic control (10).

Assuming we provide PCPs with all the necessary resources to treat diabetics and initiate insulin (more allotted time to see patients, certified diabetes educators, etc), would this solve the entire problem? Probably not. Because PCPs may lack knowledge regarding many aspects of diabetes in general and insulin therapy in particular. The need for more teaching and continuing medical education is essential. In fact, we may need to go back to medical schools' curriculums and make changes; medical students should be given more time to study diabetes and its treatment. House staff (interns and residents) should be exposed to more outpatient diabetes management. The current medical training system does not prepare physicians, when graduating from internal medicine programs, to adequately treat patients with diabetes (11).

In order to provide our diabetics with the best care, many changes in our health care system need to take place as part of a worldwide reform which will involve medical schools, internal medicine programs, continuing medical education providers, health insurance industry, medical malpractice, hospitals and outpatient practices infrastructure and most importantly physician's mentality. This reform will only happen if we all unite and have as a common goal our patients' interest as outlined in the Hippocratic Oath.

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