MD CONFERENCE EXPRESS®

Diabetes and CKD Guidelines Update

Written by Phil Vinall

Rudy Bilous, MD, Newcastle University, Newcastle upon Tyne, United Kingdom, discussed the 2012 revisions to the National Kidney Foundation and Kidney Disease Outcomes Quality Initiative 2007 guidelines. Revisions were made in Guideline 2 (Management of Hyperglycemia and General Diabetes Care in Chronic Kidney Disease [CKD]), Guideline 4 (Management of Dyslipidemia in Diabetes and Chronic Kidney Disease), and Guideline 6 (Management of Albuminuria in Normotensive Patients With Diabetes). The guidance is expected to be published in the September/October 2012 issue of the *American Journal of Kidney Diseases* and will also be available online at http://www.kidney.org/professionals/KDOQI/index.cfm.

Revisions to Guideline 2:

- 2.1: A target HbA1C of ~7.0% is recommended to prevent or delay progression of the microvascular complications of diabetes, including diabetic kidney disease
- 2.2: Treating patients at risk of hypoglycemia to an HbA1C target of <7.0% is not recommended
- 2.3: Target HbA1C should be extended above 7.0% in individuals with comorbidities or limited life expectancy and risk of hypoglycemia

These revisions were based on the lack of data that suggested true efficacy for glycemic control in kidney disease in patients with type 2 diabetes. Although observational studies suggest that better glycemic control leads to less risk of death and vascular disease in patients with type 2 diabetes [Selvin E et al. *Diabetes* 2011; DCCT/EDIC Research Group *N Engl J Med* 2011], randomized clinical trials in these patients did not detect clinically significant reductions in cardiovascular disease or mortality with very intensive glycemic control [Patel A et al. *N Engl J Med* 2008; Duckworth W et al. *N Engl J Med* 2009]. In a meta-analysis (n=27,769) that compared intensive (most with HbA1C <7%) with conventional glycemic control, investigators reported no statistically significant effect of intensive glycemic control on nephropathy [Hemmingsen B et al. *BMJ* 2011].

Revisions to Guideline 4:

- 4.1: Low-density lipoprotein-cholesterol (LDL-C)-lowering medicines, such as statins or statin/ezetimibe combinations, are recommended to reduce the risk of major atherosclerotic events in patients with diabetes and CKD, including those who have received a kidney transplant
- 4.2: Initiation of statin therapy in patients with diabetes who are treated by dialysis is not recommended.

These changes were based on a number of studies of diabetes and CKD that showed small to no effect of lipid lowering on glomerular filtration rate. In the Study of Heart and Renal Protection [SHARP; NCT00125593], reduction of LDL-C with statins reduced the incidence of major atherosclerotic events in patients with diabetes but had no effect on mortality [Baigent C et al. *Lancet* 2011]. These findings were the basis for the changes regarding statin therapy in the predialysis population (4.2).

Peer-Reviewed Highlights from the
American Diabetes Association.
72nd scientific sessions
JUNE 8-12, 2012 • PHILADELPHIA, PA

Revisions to Guideline 6:

- 6.1: Use of an angiotensin-converting enzyme (ACE) inhibitor or an angiotensin receptor blocker (ARB) for the primary prevention of diabetic kidney disease in normotensive normoalbuminuric patients with diabetes is not recommended (1A)
- 6.2: Use of an ACE inhibitor or an ARB in normotensive patients with diabetes and albuminuria levels ≥30 mg/g who are at high risk of diabetic kidney disease or its progression is not recommended (2C)

Clinical evidence has failed to provide evidence that ACE inhibitors or ARBs can prevent the development of microalbuminuria in normotensive normoalbuminuric patients, but there are some signs that renin-angiotensin system (RAS) blockade may be effective in preventing the development of microalbuminuria in patients with type 2 diabetes. Prof. Bilous cautioned that the majority of the patients in all of the studies were hypertensive. In addition, there were varying levels of blood pressure control among the studies, with the studies achieving the best control being neutral in terms of any preventive effect. What the studies do tell us, Prof. Bilous said, is that "we need to manage blood pressure effectively in patients with type 2 diabetes, and while RAS blockade may be an important part of that blood pressure control, it may not be the RAS blockers *per se* that reduce albuminuria."

Managing Hyperglycemia in Hospitalized Patients

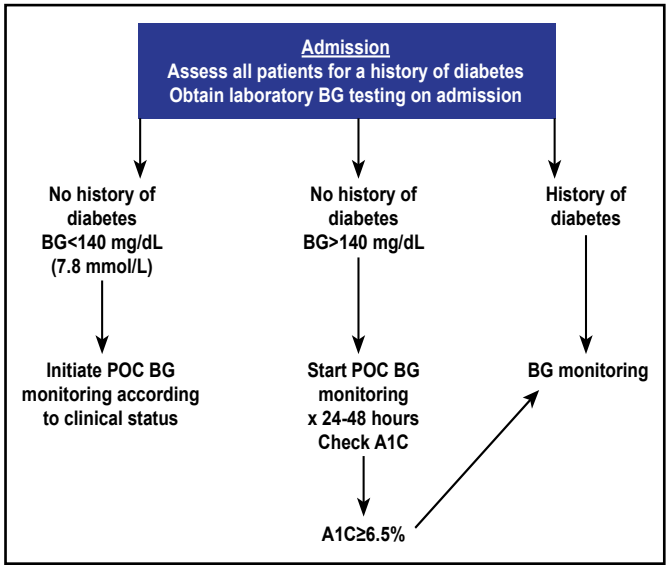
Written by Phil Vinall

Hyperglycemia occurs frequently in hospitalized patients and affects outcomes, including mortality, inpatient complications, length of stay, and overall hospital costs [Schmeltz LR, Ferrise C. *Hosp Pract (Minneap.)* 2012]. Observational and randomized controlled studies indicate that improving glycemic control results in lower rates of hospital complications in general medicine and surgery patients [Umpierrez GE et al. *J Clin Endocrinol Metab* 2012]. Guillermo E. Umpierrez, MD, Emory University School of Medicine, Atlanta, Georgia, USA, reviewed the latest Endocrine Society Clinical Practice Guidelines for the management of hyperglycemia in hospitalized patients in noncritical care settings [Umpierrez GE et al. *J Clin Endocrinol Metab* 2012].

The guideline objectives include: identifying best practices for recognizing and diagnosing hyperglycemia and diabetes in the hospital setting; identifying appropriate glycemic targets and the rationale for modifying them; understanding how to best reach glycemic targets safely; and recognizing and addressing specific aspects of management (eg, transitions of care and medical nutrition therapy [MNT]).

Dr. Umpierrez's presentation covered the diagnosis and recognition of hyperglycemia and diabetes in the hospital setting (Figure 1). He described the benefits and risks of using HbA1C for diagnosis (ie, values can be altered with several conditions, and analysis should be performed using a method that is certified by the National Glycohemoglobin Standardization program) [Suadek CD et al. *JAMA* 2006].

Figure 1. Diagnosis and Recognition of Hyperglycemia and Diabetes in the Hospital Setting.



Reproduced with permission from G. Umpierrez, MD.

He discussed monitoring of glycemia and glycemic targets (Table 1) in the noncritical care setting (ie, a premeal glucose target of <140 mg/dL [7.8 mmol/L] and a random blood glucose of <180 mg/dL [10.0 mmol/L]) for the majority of patients with noncritical illness [Umpierrez GE et al**.** *J Clin Endocrinol Metab* 2012]. He also covered MNT, transition from home to hospital, and pharmacological therapy (eg, scheduled subcutaneous insulin therapy consisting of basal or intermediate-acting insulin given once or twice a day in combination with rapid- or short-acting insulin administered before meals in patients who are eating; Table 2).