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In each issue of *Diabetes Resources* we have provided specific information about management for diabetes, including important tests and resources to help reduce complications associated with the disease. Information is included about the ABCs of diabetes: A1C testing 2-4 times per year, Blood pressure screening at every visit, and annual Cholesterol testing. Additional clinical information is also provided. A dilated eye exam, sensory foot exam and screening for kidney disease are each recommended annually. Attention to these risk factors reduces the chance for cardiac, renal, eye and vascular disease secondary to diabetes.

In support of the New Mexico Adult Diabetes Practice Guideline 2011, please see the reverse side of *Diabetes Resources* for recommendations for care including resources and tools that can help in your efforts to provide education and support among your patients with diabetes.

Check www.nmtod.org for organizations that have graciously provided funding for *Diabetes Resources*.

New Mexico Health Care Takes On Diabetes, a New Mexico non-profit corporation, is a broad coalition of New Mexico's diabetes care professionals, New Mexico Health Plans, the New Mexico Department of Health, and the New Mexico Medical Review Association, with technical and administrative support from the American Diabetes Association.

Diabetes Resources

Practical Information for New Mexico Health Care Professionals



A quarterly publication for clinicians caring for people with diabetes - Vol 15 No. 11, 2011

Early Use of Insulin in Type 2 Diabetes

The Issue:

Too few people with type 2 diabetes have achieved glycemic targets that have been shown to reduce the risk of complications. To address this, the American Diabetes Association (ADA) now promotes rapid intensification of therapy to keep the A1C below 7%.¹ Early use of insulin can help to achieve the A1C goal. The ADA recommends insulin as a "Tier One" therapy after metformin and a sulfonylurea. The American Association of Clinical Endocrinologists (AAACE) recommends insulin therapy for patients with an A1C >8% and for patients on maximum combination therapy who have an A1C >6.5%.²

Benefits and Risks of Insulin Therapy:

Insulin is more effective at lowering the A1C than any single agent or dual therapy.³ Early use of insulin may preserve pancreatic function, maintain glycemic control, and reduce symptoms.^{4,5} Temporary use of insulin in those with severe hyperglycemia can break the cycle of glucose toxicity and impaired insulin secretion. Providers often worry about the risk of hypoglycemia and weight gain with insulin therapy. However, studies show that hypoglycemia incidence with insulin is comparable to that with sulfonylureas in people with type 2 diabetes. Recognition and treatment of hypoglycemia should be reviewed with patients who are starting insulin. Both hypoglycemia and weight gain can be avoided with careful insulin dosing.

Insulin Initiation:

Despite the many benefits of early insulin therapy, providers frequently delay initiating insulin until the A1C is much higher than desirable. Insulin therapy should be considered for all patients with an A1C >8% as well as for patients with high fasting glucose and/or large glucose excursions following meals regardless of the A1C level.² Patients should perform frequent glucose monitoring for several days to identify glycemic patterns prior to starting insulin. While multiple-daily-injection basal/prandial regimens are optimal and most closely mimic pancreatic function, these regimens can be impractical when initiating insulin therapy. Often, a secretagogue can be continued to address post-prandial hyperglycemia and one daily dose of a long-acting insulin can be used as initial insulin therapy. If insulin is needed to control post-prandial hyperglycemia, a pre-mixed insulin may be appropriate as initial therapy. Insulin should be initiated as first-line therapy in those with newly diagnosed type 2 diabetes who have an A1C >10%. This initial use of insulin often restores some cellular sensitivity and treats glucose toxicity. In this case, insulin use is usually temporary.

Provider Barriers:

Common barriers to recommending initiation of insulin therapy include lack of time, lack of resources, and lack of the knowledge required to teach patients how to administer insulin and how to adjust insulin doses. A certified diabetes educator (CDE) is an invaluable resource. When a CDE is not available, clinical staff can be trained to teach patients to use insulin pens and providers and patients can follow available algorithms to adjust insulin doses.

References:

- 1 Nathan DM, Buse JB, Davidson MB, Ferrannini E, Holman RR, Sherwin R, Zinman B. Medical Management of Hyperglycemia in Type 2 Diabetes: A Consensus Algorithm for the Initiation and Adjustment of Therapy A consensus statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diab Care* 2009;32:93-203.
- 2 AAACE Diabetes Mellitus Clinical Practice Guidelines Task Force. American Association of Clinical Endocrinologists Medical Guidelines for Clinical Practice for the Management of Diabetes Mellitus. *Endocr Pract* 2007;13(S1):3-68.
- 3 Hsu WC. Consequences of Delaying Progression to Optimal Therapy in Patients with Type 2 Diabetes not Achieving Glycemic Goals. *South Med J* 2009;102(1):67-76.
- 4 Marrero DG. Overcoming Patient Barriers to Initiating Insulin Therapy in Type 2 Diabetes Mellitus. *Clin Cornerstone* 2007; 8(2):33-43.
- 5 Wright A, Burden ACF, Paisey RB, Cull CA, Holman RR, UK Prospective Diabetes Study Group. Sulfonylurea Inadequacy: Efficacy of addition of insulin over 6 years in patients with type 2 diabetes in the U.K. Prospective Diabetes Study (UKPDS 57). *Diab Care* 2002; 25:330-6.

Resources for Clinicians

The following resources are FREE and can be downloaded from the New Mexico Health Care Takes On Diabetes website at www.nmtod.org. For further information contact Charm Lindblad, Executive Director, at 505.796.9121 or toll-free 1.866.796.9121.

Reducing Cardiometabolic Risk: Patient Education Tool Kit—To

assist with your educational efforts, a comprehensive kit of reproducible patient education handouts on topics related to cardiometabolic risk reduction, pre-diabetes, diabetes, and CVD. Developed by the American Diabetes Association, American College of Cardiology and Preventive Cardiovascular Nurses Association, the kit covers 29 topics and is available in English and in Spanish. A CD-ROM version of this toolkit is also available. Request a copy at http://professional.diabetes.org/ResourcesForProfessionals.aspx?cid=77080&utm_source=offline&utm_medium=print&utm_campaign=RCMR.

Addressing Patient Reluctance to Starting Insulin Therapy: A

Practitioner Tool—It is essential that the practitioner elicit any concerns about starting insulin from the patient. This tool provides strategies to assist the practitioner in exploring these concerns. This tool can be found at www.nmtod.org/additionalabc.html.

It is essential that the provider elicit any concerns about starting insulin from the patient. These concerns should be explored by the provider. The following articles can assist providers in determining when to recommend insulin therapy and how to adjust the insulin regimen:

- ❖ Davis SN, Renda SM. Psychological Insulin Resistance: Overcoming Barriers to Starting Insulin Therapy. *The Diabetes Educator* 2006; 32(S4): 146S-152S
- ❖ Hirsch IB, Bergenstal RM, Parkin CG, Wright E, Buse JB. A Real-World Approach to Insulin Therapy in Primary Care Practice. *Clinical Diabetes* 2005; 23(2):78-86. Available at: <http://clinical.diabetesjournals.org/content/23/2/78.full> (accessed Oct. 26, 2010).
- ❖ Nathan DM, Buse JB, Davidson MB, Ferrannini E, Holman RR, Sherwin R, Zinman B. Medical Management of Hyperglycemia in Type 2 Diabetes. *Diabetes Care* 2009; 32(1):193-203. Available at <http://clinical.diabetesjournals.org/content/27/1/4.full> (accessed Nov. 2, 2010).
- ❖ Reid TS. Insulin for Type 2 Diabetes Mellitus: Separating the Myths from the Facts. *Insulin* 2007; 2(4):182-9.

Websites—

The editorial committee has identified websites that you may find informative:

Information About Insulin:

- ❖ Insulin Resource Guide (ADA):
www.diabetes.org/uedocuments/df-rg-insulin-0108.pdf
- ❖ Insulin Delivery Resource Guide (ADA):
www.diabetes.org/uedocuments/df-rg-insulin-delivery-0108.pdf
- ❖ Premixed Insulin Guides (AHRQ):
For Clinicians: http://effectivehealthcare.ahrq.gov/repFiles/Insulin_Clinician5.pdf
For Consumers: http://effectivehealthcare.ahrq.gov/repFiles/Insulin_Consumer_Web.pdf

Diabetes Education:

- ❖ Diabetes Educators & Your Practice (AADE):
www.diabeteseducator.org/_resources/pdf/physicians_brochure.pdf
- ❖ Find a Diabetes Educator (AADE):
www.diabeteseducator.org/DiabetesEducation/Find.html
- ❖ Recognized Education Programs (ADA):
http://professional.diabetes.org/ERP_List.aspx

*These websites may be accessed directly or through the New Mexico Health Care Takes On Diabetes website www.nmtod.org.**

**Please note that these websites do not necessarily represent the views of NMHCTOD. They are listed for your reference and convenience. NMHCTOD does not evaluate websites for content accuracy or application to any clinical situation.*

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