

## The Refractory Patient—Managing Diabetes by the Ear

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### Abstract

Refractory, or 'difficult to control,' diabetes is a commonly encountered condition in specialist practice. This editorial describes the characteristics of people with diabetes who are unable to achieve optimal glycemic control, despite aggressive drug therapy. It reflects upon the importance of bidirectional communication between patient and physician, and highlights the need for systematic history taking, empathic listening, and therapeutic patient education. The editors call for practicing 'diabetes therapy by the ear,' in conjunction with evidence-based pharmacological therapy, to help reduce the prevalence of refractory diabetes.

### Keywords

Insulin, oral hypoglycemics, hyperglycemia, psychosocial aspects, type 2 diabetes

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From a neutral perspective, in today's world, diabetes management should be a cakewalk. Advances in pathophysiology have provided a rational basis for choosing appropriate therapy. Developments in pharmacology have created a wide spectrum of drugs, drug combinations, delivery devices, and formulations to choose from. Improvements in diagnostics have allowed better screening and monitoring of diabetes, as well as early detection of complications and comorbidities. Enhanced understanding of the psychosocial determinants of diabetes has facilitated the support that people with diabetes require for adequate control.

A large number of persons having diabetes, however, still do not achieve optimal control. Many hypotheses try explain this state of affairs. Poor healthcare-seeking behavior and lack of adherence on part of the patient, clinical inertia, and inappropriate choice of therapeutic regimes on part of the physician, and poor psychosocial support from family members or diabetes care providers have all been suggested as reasons. Whatever the reason, a distinct subgroup of patients remain unable to achieve glycemic targets despite the best possible intensive therapy. Such patients are termed "functionally refractory."

The term *refractory*, as defined by the dictionary, means "resisting ordinary methods of treatment."<sup>1</sup> The use of this term is not new. Within a few years of the introduction of insulin, authors had begun reporting "refractoriness" to insulin for various etiologies.<sup>2–4</sup> About the same time, other authors differentiated between insulin resistance (a requirement for, and response to, higher doses) and insulin refractoriness (no response whatsoever to insulin).<sup>5</sup> The causes of refractoriness in diabetes, described in century-old literature, bear an uncanny resemblance to our current "evidence-based" knowledge.

Refractoriness to diabetes treatment is an important clinical challenge, observed more often in specialist clinics<sup>6</sup> than in primary settings. No single pharmacological panacea is available to manage diabetes, but a systematic approach to the patient certainly helps in planning a proper strategy for achieving person-centric goals. This is advantageous not only for the patient, but for the physician and healthcare system as well.

We suggest a simple framework, based upon clinical skills, to assess the various determinants of refractoriness and plan appropriate interventions for glycemic control. Early age of onset, longer duration of diabetes, greater complexity and number of therapies, use of insulin, and presence of microvascular complications are all predictors of functional refractoriness.<sup>6</sup> These characteristics can be used as "red flags" in a diabetes care practice to triage select patients toward more intensive nonpharmacologic counseling and support (see *Table 1*).<sup>6</sup> A 35-year-old woman on insulin plus oral glucose-lowering drugs (OGLDs) for 14 years, for example, may be given priority in appointments with the dietician and diabetes counselor, compared with a 45-year-old male having a history of uncomplicated diabetes for only 2 years.

A detailed history is often sufficient to elicit the cause of so-called refractoriness.<sup>7</sup> Even in a specialist practice, it is the "simpler" causes of hyperglycemia, rather than complicated diagnoses of endocrinopathy, that predominate in such patients. *Table 2* lists some frequently encountered causes of uncontrolled hyperglycemia, which can easily be remembered by the mnemonic DIETS. Feedback on outcomes is an important step not only in assessment and accountability of practices, but also in improving quality of care. This feedback, however, should be multidimensional.

**Table 1: Red Flags for Triage—Markers of a Refractory Patient**

<b>History</b>
<ul style="list-style-type: none"> <li>• Early onset of diabetes</li> <li>• Long duration of diabetes</li> </ul>
<b>Complications</b>
<ul style="list-style-type: none"> <li>• Microvascular complications at presentation to specialist care</li> </ul>
<b>Drug therapy</b>
<ul style="list-style-type: none"> <li>• Insulin use</li> <li>• Complexity of therapy</li> <li>• Number of therapeutic agents</li> </ul>
<b>Examination</b>
<ul style="list-style-type: none"> <li>• Higher body mass index (in insulin-treated patients)</li> </ul>

The person having diabetes must take responsibility for sharing full information, which must be elicited by the diabetes care provider with empathy. At the same time, clinical notes must be exchanged among members of the diabetes care team. Information that may be shared with one member of the team—e.g. a history of marital discord or of inability to afford or access healthy foods—often provides the clue to the etiology of refractoriness. Examination findings of relevance, such as lipohypertrophy, must be documented carefully.

Though we fully support the need to identify the barriers faced by functionally refractory patients and use modern technology to develop more innovative approaches for them, we remind our readers of the

**Table 2: Etiology of Hyperglycemia**

<b>Diet (inappropriate)</b>
Distress
Depression
<b>Infection (occult, symptomatic)</b>
Instrument failure
Iatrogenic
<b>Exercise (lack of)</b>
Ethanol, in excess
Endocrine (pituitary, thyroid, adrenal)
<b>Technique (insulin)</b>
Therapy (choice of)
Timing of administration
<b>Sleep disorders</b>
Surgical comorbidity
Social support (lack of)

importance to practice “diabetes therapy by the ear.”<sup>8</sup> Diabetes therapy by the ear is a bidirectional process, involving empathic history taking and providing therapeutic patient education, delivered with words of comfort.<sup>9</sup> Though appropriate pharmacologic treatment is certainly necessary for good glycemic control, supplementation with therapy by the ear is equally essential for the functionally refractory patient. Enhanced attention to this aspect of diabetes care may help specialist practices improve their average glycosylated hemoglobin levels to those seen in primary care registries. ■

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