COMMENTARY

Minimally Disruptive Diabetes Care for the Elderly

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The Work of Being a Patient

DIABETES MANAGEMENT REQUIRES practical and emotional work from patients and their families. It has been estimated that enacting the self-care activities recommended by the American Diabetes Association (ADA) (e.g., checking feet, monitoring glucose, and exercising) would require more than 2 h daily.¹ This obviously underestimates the investments type 1 diabetes mellitus (T1DM) patients must make to take the role of their own pancreas, unremittingly tracking their health, and managing glycemia.

Diabetes management competes for patients' time, energy, and attention² with the care of other medical conditions. It also competes with their engagement in meaningful activities that lead to joy and well-being, such as parenting, hobbies, volunteering, and paid work. The ongoing threat of hypoglycemia further limits patients' ability to focus on these activities.² Hypoglycemic episodes disrupt daily life, and efforts to prevent them are sometimes delayed because of distracted attention and fear of embarrassment.³ Hence, patients with T1DM must constantly juggle daily obligations and demands of life, the work of achieving glycemic control and implementing healthy lifestyles, and other eudemonic pursuits.

Aging complicates the work of managing diabetes as comorbidities accumulate.⁴ Disease-specific guidelines, when implemented without regard to context, lead to polypharmacy, complexity, and increased burden of treatment.⁵ Concurrently, the mechanical aspects of diabetes self-management may become more difficult with declining vision, dexterity, and cognitive function. Patients may lack the emotional and social support necessary as they confront social isolation or struggle to live independently. Elderly patients are also at increased risk for hypoglycemia and associated sequelae: cognitive decline, injuries, and death.^{6,7} These considerations reflect a reduction in the so-called patient capacity (i.e., time, attention, resources, and energy) to enact the work of being a patient. For complex patients with diabetes, the balance of workload and

capacity should be considered in the design of evidence-based care plans and treatment technologies.

Diabetes Care in the Elderly: Evidence and Guidelines

The available evidence for T1DM management in the elderly is largely indirect. A wide consensus for tight glycemic control ($HbA_{1c} \leq 7.0\%$) emerged after the Diabetes Control and Complications Trial (DCCT),⁸ although patients more than 40 years old or with comorbidities were excluded.^{9,10} This level of control was associated with a threefold increased incidence of severe hypoglycemia, likely an underestimation of the risk in older comorbid patients and of the time spent at milder levels of hypoglycemia.^{8,11} In this issue, Dubose et al. have contributed to knowledge in this group by reporting risk factors for hypoglycemia in elderly patients with T1DM.¹² Furthermore, they have estimated that these patients spent a mean of 1.5 h/day in biochemical hypoglycemia (glucose level <70 mg/dL).¹²

The ADA and other diabetes guidelines respond to the increased risk of hypoglycemia in the elderly by recommending individualization of glycemic goals.^{13,14} These well-intentioned statements, however, do not guide clinicians in enacting this patient-centered approach, and practice-based evidence suggests that they are not implemented.¹⁵ Treatments that account for variability in routines and appetite usually demand more work and more decisions from patients, and may be impractical for some elderly.¹⁶ The work of arriving at an adequate plan for these patients hinges on clinicians' ability to "oscillate our gaze"¹⁷ from general guidelines to the particularities of each patient. This is the work of minimally disruptive medicine (MDM).

Minimally Disruptive Medicine

MDM is a patient-centered approach that prioritizes patients' goals for life and health while minimizing the

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healthcare footprint on patients' lives.¹⁸ It proposes that the accessibility and use of care and enactment of self-care depend on having sufficient capacity to shoulder the work of being a patient.¹⁹ The extent to which this work, including the work of managing diabetes, impacts patients' performance and well-being reflects the burden of treatment.^{20,21} Overwhelmed patients may not be able to reach hemoglobin A1c or blood pressure targets,¹⁹ as their burden of treatment is associated with exhaustion with self-care and lower medication adherence.^{5,22} In such cases, treatment intensification to avoid clinical inertia can paradoxically exacerbate workload-to-capacity imbalances.¹⁹ Intensification may ineffectively direct attention toward healthcare at the expense of other meaningful activities, for example, time with grandchildren, reducing patients' quality of life. Despite their critical roles, the work of being a patient, in general, and the burden of diabetes care, in particular, remain largely understudied.

MDM seeks to attain patient goals while minimizing the burden of treatment. Patients with limited capacity exposed to high treatment workload are at increased risk of becoming overwhelmed by the burden of treatment. Patients with lower education levels, more chronic conditions, taking more medications per day, and interacting more frequently with healthcare are more likely to experience higher burden of treatment.⁵ To be minimally disruptive, care must account for and adapt to each patient's context. The most sensible course of action for a 66-year-old mother with T1DM helping her adult daughter buy a starter home is likely to differ significantly from that of an 88-year-old widower struggling to live independently on fixed income. Clinicians consider these situations as scenarios in which evidence-based care must be adapted to fit the biomedical and personal contexts of each patient,¹⁷ arriving at a treatment plan that is compatible with who each patient is and what each patient wants to do in their lives.

Toward Minimally Disruptive Care for Elderly Patients with Diabetes

Pancreas replacement technologies, such as closed-loop insulin pumps and beta cell transplantation, may impact the amount and nature of the work required for T1DM management. The adoption of new treatment regimens and technologies and their normalization into daily life require new work from patients. They must make sense of the new work, organize and plan the work, and elicit help from others to accomplish it, enact the work, and monitor and assess its worth.²³ Monitoring immunosuppressive therapies after transplantation requires frequent interactions with healthcare.²⁴ Continuous glucose monitoring, while decreasing the need for multiple painful finger-sticks and to carry glucose measurement materials, may also increase the frequency of monitoring and the attention it demands from patients.²⁵ Clinical services and technological solutions must be designed not just to work but also to demand the least of their end users. Their footprint on people's lives should be the smallest possible.

Several approaches can support the practice of MDM. Investigators can design large trials, inclusive of older patients with multimorbidity and polypharmacy to improve the applicability of evidence and the corresponding guidelines to diverse populations of patients. These trials can assess burden

of treatment as an outcome to offer comparative estimates of how the work of implementing new therapies and technologies impacts a holistic concept of well-being for elderly patients that goes beyond biological indices.^{5,22} Clinicians can use tools, like the Instrument for Capacity Assessment Discussion Aid, to uncover contextual issues relevant to patient care.²⁶ In these efforts, therapy and technology that protect against hypoglycemia will be crucial in supporting patient safety and freeing mental bandwidth. To support MDM, technology designers should assume that patients and caregivers are overwhelmed and that whatever little capacity patients have left is being used in meeting obligations to loved ones and in pursuing their hopes and dreams.

Diabetes care for elderly patients with T1DM requires careful and judicious application of the available research evidence and safe implementation of best practices oriented toward achieving patient goals. These should be feasible and desirable to the patient in their context and kind so as to not overwhelm whatever patient capacity remains available to pursue joyful and meaningful aging. In sum, they need careful, kind, and minimally disruptive diabetes care.

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