Type 1 diabetes: Beyond insulin, what are we missing?

Written by The Life Science Feed Editorial Team · Published 24 September 2026 · Edited by Mara Voss

> The diagnosis of type 1 diabetes (T1D) often marks the beginning of a complex, lifelong journey for patients and their clinicians. While insulin replacement remains the cornerstone of therapy, effective early-stage management demands a broader perspective, encompassing education, psychological support, and proactive complication screening. The initial period following diagnosis is critical for establishing habits that can significantly influence long-term outcomes.

KEY TAKEAWAYS

- The Pivot: Early T1D care requires a multidisciplinary approach, moving beyond immediate insulin needs to address education, psychological support, and complication prevention.
- The Data: No specific trial data are available for this general topic, but established guidelines emphasize structured education and regular screening.
- The Action: Clinicians should integrate comprehensive patient education, psychological assessment, and early screening for comorbidities into their initial care pathways for newly diagnosed T1D patients.

Type 1 diabetes is an autoimmune condition characterized by the destruction of pancreatic beta cells, leading to absolute insulin deficiency. The onset can be abrupt, often presenting with classic symptoms of polyuria, polydipsia, polyphagia, and weight loss, sometimes progressing rapidly to diabetic ketoacidosis (DKA). This initial presentation necessitates immediate insulin therapy to stabilize metabolic derangements and prevent life-threatening complications.
The diagnostic process typically involves measuring blood glucose levels, glycated haemoglobin (HbA1c), and autoantibodies such as glutamic acid decarboxylase (GAD), insulin autoantibodies (IAA), and islet antigen 2 (IA-2). Identifying these autoantibodies helps differentiate T1D from other forms of diabetes, particularly type 2 diabetes, which can sometimes present similarly in younger individuals. A thorough clinical assessment is paramount to confirm the diagnosis and initiate appropriate treatment without delay.

Establishing Glycaemic Control and Education

Achieving and maintaining optimal glycaemic control is the primary objective in early T1D management. This involves initiating insulin therapy, which can range from multiple daily injections (MDI) to continuous subcutaneous insulin infusion (CSII) via an insulin pump. The choice of regimen depends on patient preference, lifestyle, and clinical factors, with the goal of mimicking physiological insulin secretion as closely as possible.
But insulin alone is insufficient. Comprehensive patient education is fundamental, covering topics such as carbohydrate counting, insulin dose adjustment, blood glucose monitoring (BGM), and the recognition and management of hypoglycaemia and hyperglycaemia. Structured education programmes, delivered by diabetes specialist nurses and dietitians, are essential for empowering patients to self-manage their condition effectively. Without this foundational

knowledge, adherence to complex insulin regimens becomes challenging, risking poor glycaemic outcomes. Continuous glucose monitoring (CGM) systems have revolutionized glycaemic management, providing real-time glucose data and trends. These devices allow patients and clinicians to identify patterns, optimize insulin dosing, and reduce the time spent in hypoglycaemia or hyperglycaemia. Integrating CGM into early T1D care can significantly improve patient understanding and engagement, fostering better long-term control. For instance, understanding why CGM readings drift during a marathon highlights the need for tailored advice.

The initial period also requires careful attention to the 'honeymoon phase,' where residual beta-cell function may temporarily reduce insulin requirements. While this phase can offer a brief respite, it is important for preserving remaining beta-cell function and preventing relapse into severe hyperglycaemia to educate patients that it is temporary and to continue insulin therapy. Regular follow-up with the diabetes care team is vital during this fluctuating period to adjust insulin doses and provide ongoing support.

Psychological Support and Comorbidity Screening

A diagnosis of T1D can have profound psychological impacts, including anxiety, depression, and diabetes distress. Providing early psychological support is not merely an adjunct but an integral part of holistic care. Screening for mental health issues should be routine, and patients should have access to mental health professionals specializing in chronic illness. Addressing these psychological burdens can improve adherence to treatment regimens and enhance overall quality of life.

The transition from paediatric to adult care is another critical juncture where psychological support is often needed. Adolescents and young adults face unique challenges in managing T1D, including peer pressure, body image concerns, and developing independence. Structured transition programmes can help bridge this gap, ensuring continuity of care and preventing disengagement from treatment. This is particularly important as patients navigate increasing self-management responsibilities.

Early screening for common comorbidities associated with T1D is also essential. These include thyroid disease (e.g., Hashimoto's thyroiditis), coeliac disease, and other autoimmune conditions. Regular screening for these conditions allows for early detection and intervention, preventing further complications and improving patient outcomes. For example, annual screening for thyroid function and coeliac antibodies is often recommended as part of routine T1D care.

Beyond autoimmune conditions, cardiovascular risk factors must be addressed from diagnosis. While overt cardiovascular disease typically manifests later, establishing healthy lifestyle habits, including diet and exercise, is paramount for long-term cardiovascular health from the outset. Regular monitoring of blood pressure and lipid profiles, alongside glycaemic control, forms a comprehensive strategy for long-term cardiovascular health. Clinicians may find the Oxford Handbook of Endocrinology and Diabetes a useful reference for these management aspects.

The Role of Technology and Future Directions

Technological advancements continue to reshape T1D care, offering increasingly sophisticated tools for management. Hybrid closed-loop systems, often referred to as artificial pancreases, automate insulin delivery based on CGM readings, significantly reducing the burden of manual adjustments. These systems have demonstrated improvements in time in range and reductions in hypoglycaemia, offering a glimpse into the future of diabetes management.

But access to these technologies remains a challenge in many healthcare systems. Disparities in access can exacerbate health inequalities, underscoring the need for equitable distribution and training for both patients and clinicians. The complexity of these systems also necessitates robust education and support to ensure effective utilization and prevent user error. Even with advanced technology, the human element of care remains indispensable.

Research into immunomodulatory therapies aimed at preserving residual beta-cell function or even preventing T1D in at-risk individuals is ongoing. While these therapies are not yet part of routine clinical practice, they represent a significant area of investigation that could fundamentally alter the early-stage care pathway in the future. The goal is to intervene before widespread beta-cell destruction occurs, potentially delaying or even averting the need for exogenous insulin.

Still, the immediate focus for clinicians remains on optimizing current best practices. This means a relentless commitment to patient education, psychological support, and proactive screening for comorbidities, all while leveraging available technologies to enhance glycaemic control. The early years following a T1D diagnosis set the trajectory for a patient's lifelong health, making this period uniquely impactful. Understanding the nuances of severe hypoglycemia in T1D is also critical for patient safety.

Addressing the Unmet Needs in Early Care

Despite advances, significant unmet needs persist in the early-stage T1D care pathway. One critical area is the timely diagnosis, particularly in regions with limited access to specialist care. Delays in diagnosis can lead to severe presentations like DKA, increasing morbidity and mortality. Public awareness campaigns and improved primary care training are essential to shorten the diagnostic interval.

Another challenge lies in ensuring consistent access to high-quality, structured education programmes. While guidelines recommend these programmes, their availability and uptake vary widely. Standardizing educational content and delivery methods, perhaps through digital platforms, could help bridge this gap. The goal is to ensure every patient receives the knowledge and skills necessary for effective self-management, regardless of their geographical location.

The psychological burden of T1D, particularly in the early stages, is often underestimated and undertreated. Integrating mental health professionals directly into diabetes care teams could facilitate earlier intervention and provide ongoing support. This multidisciplinary approach recognizes that managing a chronic condition like T1D extends far beyond blood glucose numbers; it encompasses emotional and social well-being. For example, sleep coaching may ease glucose control, highlighting the interconnectedness of various health factors.

Finally, the long-term follow-up of patients diagnosed in early childhood presents unique challenges. Ensuring continuity of care as these individuals transition through adolescence and into adulthood requires robust systems and dedicated resources. The aim is to prevent disengagement from care, which can lead to suboptimal glycaemic control and increased risk of long-term complications. The journey with T1D is long, and early support is the foundation.

> **CLINICAL IMPLICATIONS**
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> The initial phase of type 1 diabetes management is not merely about prescribing insulin; it is about laying a comprehensive foundation for lifelong care. Clinicians who focus solely on glycaemic targets without addressing the educational and psychological needs of newly diagnosed patients are missing a critical opportunity to influence long-term outcomes. A holistic approach from day one can significantly reduce future

> complications and improve patient quality of life.
> The integration of advanced technologies like CGM and hybrid closed-loop systems, while beneficial, demands a corresponding investment in patient and clinician education. Simply handing a patient a device without adequate training is a recipe for frustration and suboptimal use. Healthcare systems must prioritize equitable access to these tools and the support infrastructure required to maximize their benefit.
> For industry, the focus should extend beyond drug development to solutions that support the entire care pathway. This includes educational platforms, digital health tools for psychological support, and integrated systems that streamline communication between patients and their multidisciplinary care teams. The real-world experience of patients highlights that medication is only one piece of a much larger puzzle.
> The persistent challenge of timely diagnosis and consistent access to structured education remains. Until every patient receives an early, accurate diagnosis and comprehensive, ongoing education, the full potential of modern T1D therapies will not be realized. This is not a matter of clinical preference, but a fundamental requirement for effective chronic disease management.

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