

Type 1 Diabetes (T1D) presents a multifaceted challenge in healthcare delivery, characterized by the loss of insulin-producing pancreatic beta-cells. This review examines the intricate features of T1D, focusing on its autoimmune nature and the pivotal role played by factors such as T-cells, genetics, and the environment in its pathogenesis. To effectively manage T1D, it is essential to consider ethical challenges, healthcare system obstacles, and socioeconomic barriers to novel therapies. Current treatments predominantly target symptom management rather than addressing the underlying autoimmune processes of T1D. This review critically examines these shortcomings, emphasizing the necessity of interventions that address the root causes of the disease. Specifically, gene and stem cell therapies emerge as promising avenues, offering transformative potential in T1D management. By delving into the pathophysiology of T1D, this review sets the stage for exploring innovative therapeutic approaches. Gene and stem cell therapies hold promising potential in revolutionizing T1D treatment by targeting the underlying disease mechanisms. Delving into the pathophysiology of T1D lays the groundwork for investigating revolutionary therapies that show promise as interventions that can address the underlying causes of disease and transform the way it is managed.