

OR30-01: Real-World Minimed™ 670G System Use and Glycemic Outcomes of Pediatric and Adult Individuals Living with Type 1 Diabetes (T1D) in the United States

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Introduction: The MiniMed™ 670G system was FDA-approved in 2016 for adults and adolescents ≥ 14 yrs, and in 2018 for children ages 7-13 yrs with T1D. Since then, use of the system has grown to over 180,000 people in the U.S. The glycemic control benefits of real-world MiniMed™ 670G system Auto Mode use in the U.S. were assessed.

Methods: System data (aggregated five-minute instances of sensor glucose [SG]) uploaded from March 2017 to July 2019 by individuals (N=118,737) with T1D and ≥ 7 yrs of age who enabled Auto Mode were analyzed to determine the mean % of overall time spent < 54 mg/dL/ < 70 mg/dL (TBR); between 70-180 mg/dL (TIR); and > 180 mg/dL/ > 250 mg/dL (TAR). The impact of Auto Mode was further assessed in a sub-group of individuals (N=51,254) with, at least, 7 days of SG data for both Auto Mode turned ON and turned OFF. The % of TIR, TBR and TAR, and the associated glucose management indicator (GMI) were evaluated for the overall OFF (2,524,570 days) and ON (6,308,806 days) periods, and across different age groups.

Results: System data TIR was 71.3%; TBR was 0.4% and 1.9%, respectively; and TAR was 26.8% and 6.2%, respectively. User-wise data of Auto Mode OFF versus ON showed a mean of 70.3% of the time spent in Auto Mode, that TIR increased from 60.9% to 69.9%; and that both TBR and TAR decreased. For those 7-13 yrs (N=1,417), TIR increased from 48.7% to 61.5%; TBR increased from 0.5% to 0.6% and from 2.0% to 2.2%, respectively; and TAR decreased from 49.3% to 36.3% and from 20.5% to 13.0%, respectively. For those 14-21 yrs (N=4,194), TIR increased from 51.0% to 61.5%; TBR decreased from 0.7% to 0.6% and from 2.3% to 2.0%, respectively; and TAR decreased from 46.7% to 36.5% and from 18.5% to 12.5%, respectively. For those ≥ 22 yrs (N=45,643), TIR increased from 62.2% to 70.9%; TBR decreased from 0.7% to 0.5% and from 2.6% to 1.9%, respectively; and TAR decreased from 35.2% to 27.3% and from 9.9% to 6.3%, respectively. The mean GMI decreased by 0.23% (overall), 0.48% (7-13 yrs), 0.35% (14-21 yrs), and 0.22% (≥ 22 yrs), respectively, with Auto Mode ON versus OFF.

Discussion: In over 6 million days of real-world MiniMed™ 670G system Auto Mode use in the U.S., TIR of a large pediatric and adult population with T1D improved by 9% compared to when Auto Mode was OFF, which was comparable to or exceeded the TIR observed in the smaller pivotal trials. These results further support outcomes of the pivotal trials and increased glycemic control with system use.