



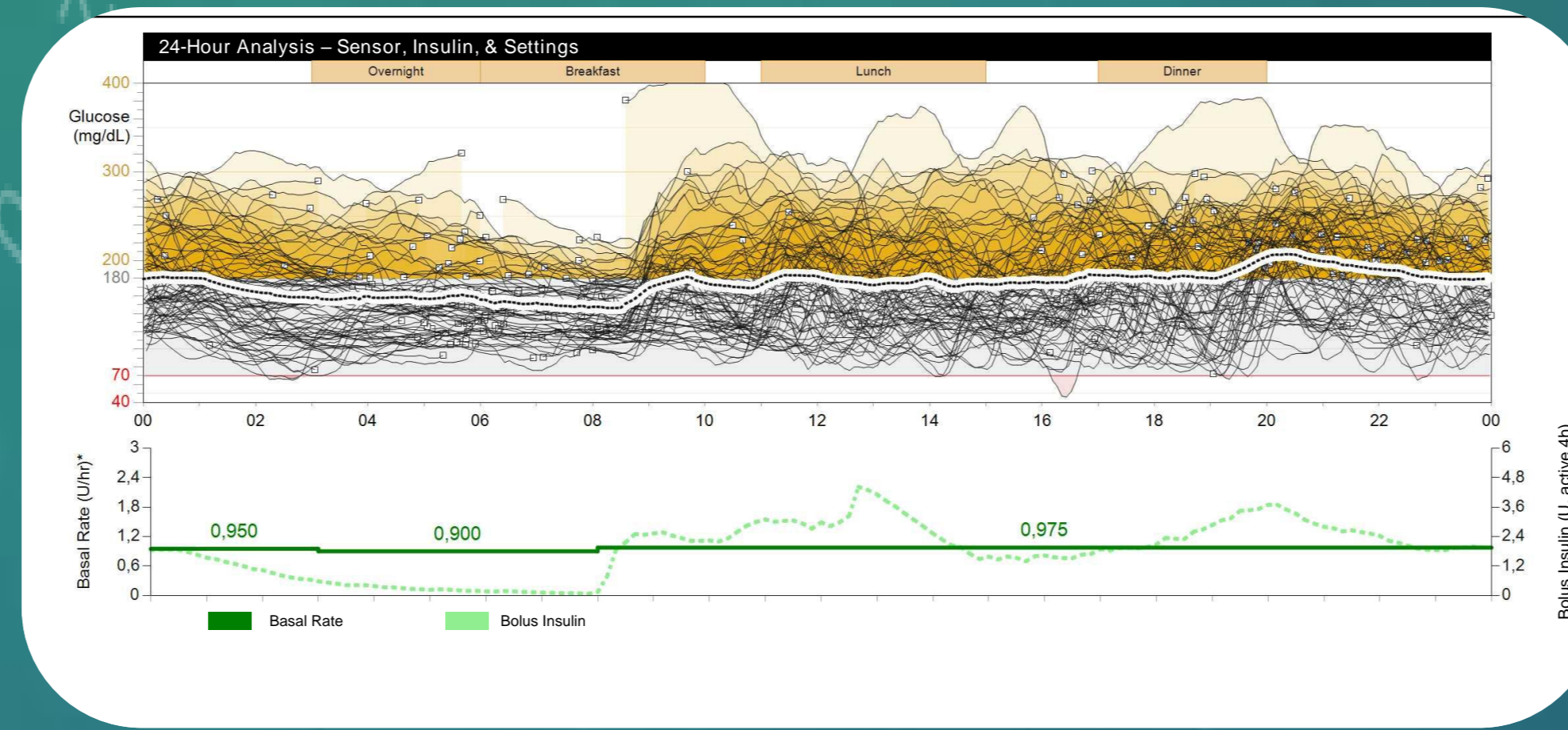
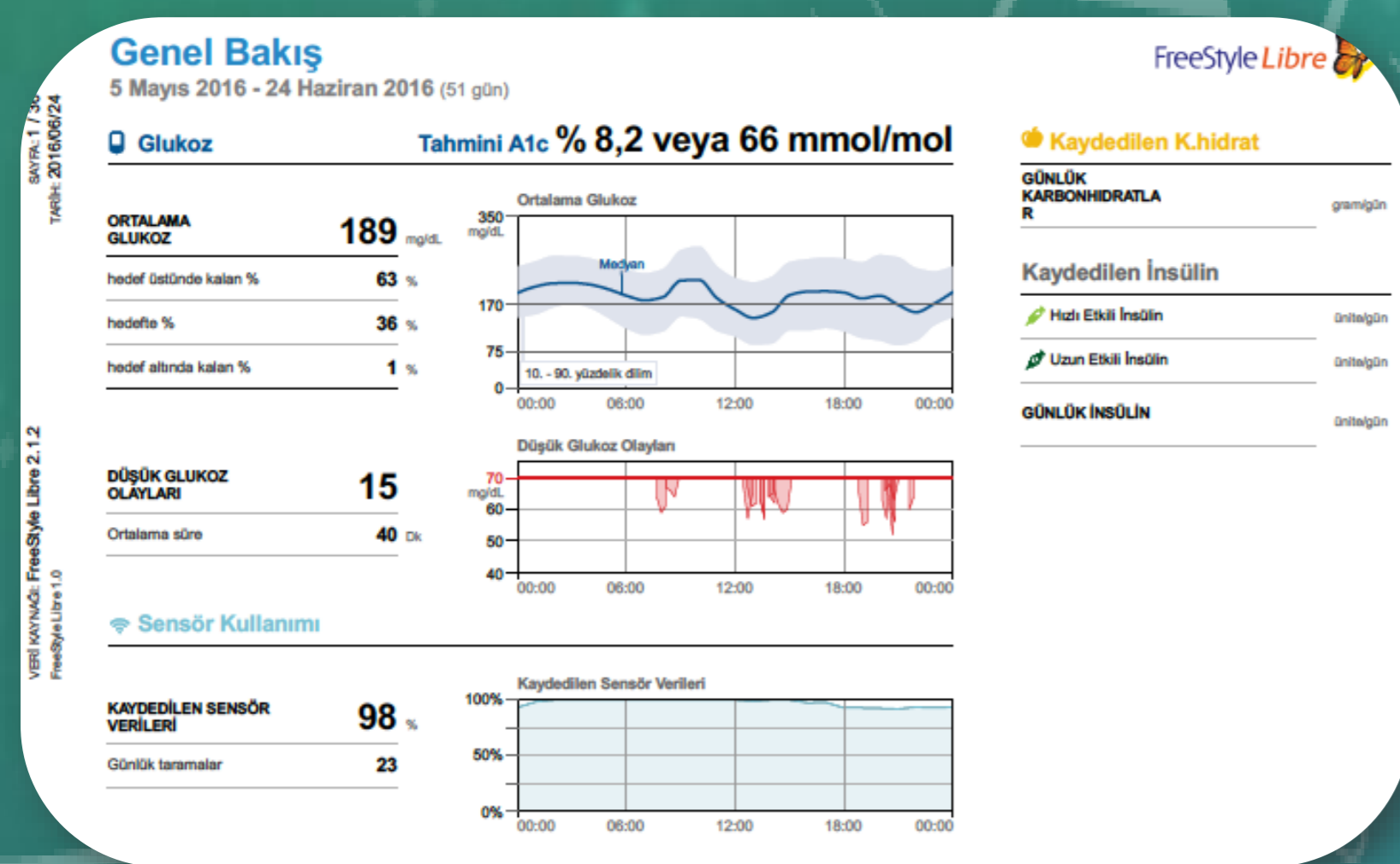
Evaluation of AGP reports in patients with type 1 diabetes using intermittently viewed continuous glucose measurement system (iCGM)

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Introduction: Reduction in glycemic variability and HbA1c levels are achieved by the use of continuous glucose measurement systems (CGM) in the patient with Type 1 diabetes mellitus (T1DM). Intermittently viewed CGM (iCGM) using flash technology have been used increasingly by diabetics and their families because of practicality. Evaluating of ambulatory glucose profiles (AGP) is very important in the management of T1DM.

Aim and Methods: In order to investigate the effectiveness of iCGM in the management of T1DM, AGP reports were evaluated in this study. The results of 80 CGM reports of 52 patients with T1DM were analyzed. Of those, 70 iCGM AGP reports were evaluated and reviewed in detail.



Results: The median age was 9.9 years (2.3-19 years) in 52 cases (20 male, 32 female). Twenty-five (48.1%) of the patients used insulin pumps, and others were on multiple doses of insulin injection therapy. A1c values were $7.81\% \pm 0.85$ in insulin pump users and $7.63\% \pm 1.04$ in multiple doses insulin injection ($p = 0.496$). Sensor types were freestyle libre in 42 cases, guardian connect in 2 cases, dexcom g4 in 1 case, and 640G model insulin pump in 7 cases. When evaluating AGP reports; digital A1c was $8.17\% \pm 1.28$, whereas serum A1c was $7.81\% \pm 1.02$ ($p < 0.05$) in 70 reports of 42 patient for freestyle libre. Digital A1c was 7.62 ± 0.54 , whereas serum A1c was 7.57 ± 0.78 ($p < 0.05$) for 640G system. Due to small number of 640G pump users, A1c levels were not compared with the freestyle libre. Freestyle libre AGP report showed that mean time in range of 41.8%, time in hyperglycemia of 51.9%, and time in hypoglycemia of 6.3%. There was no difference in target range, time in hyperglycemia and time in hypoglycemia between the pump users and others.

Conclusion: The study showed that A1c value in AGP report was correlated with the serum A1c level. Using insulin pump did not show improvement in A1c and time in range in target. It shows that freestyle libre users who were not using insulin pump may be paying more attention for diabetes care. According to the results, the use of iCGM affects the management of diabetes positively.

There is no conflict of interest in this study

