AACE Communities MIDDLE EAST

November 11-13, 2021
Grand Hyatt Hotel, Dubai

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ePoster Presentation

Effectiveness of the Freestyle Libre Flash Glucose Monitoring System on Diabetes-Self-Management Practices and Glycemic Parameters Among Patients with Type 1 Diabetes Using Insulin Pump

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INTRODUCTION

Self-monitoring of blood glucose (SMBG) supports to improve glycemic control and empowerment of people with diabetes; predominantly useful for people with diabetes who are using insulin as it facilitates insulin titration and detection of hypoglycemia .Despite this, the interest of SMBG remains low in many countries, mainly due to frustration related to high blood glucose reading, the perception that SMBG was only for insulin titration, stigma, and fear of needles .

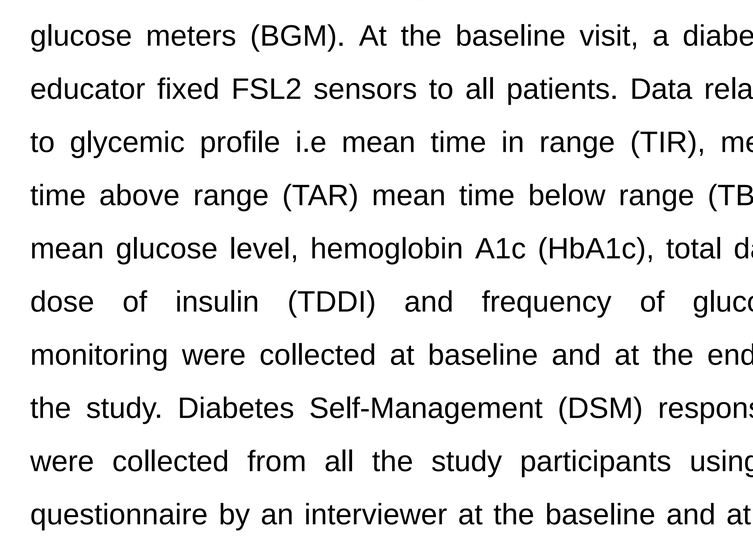
AIM

To determine the effectiveness of Freestyle Libre 2 (FSL2) Flash Glucose Monitoring System (FGMS) on diabetes-self-management practices and glycemic parameters among patients with type 1 diabetes (T1D) using Insulin Pump (IP).

METHODS

This prospective study was performed among 47 patients with T1D (13-21 years) who self-tested their glucose levels by the conventional finger-prick method using blood glucose meters (BGM). At the baseline visit, a diabetes educator fixed FSL2 sensors to all patients. Data related to glycemic profile i.e mean time in range (TIR), mean time above range (TAR) mean time below range (TBR), mean glucose level, hemoglobin A1c (HbA1c), total daily dose of insulin (TDDI) and frequency of glucose monitoring were collected at baseline and at the end of the study. Diabetes Self-Management (DSM) responses were collected from all the study participants using a questionnaire by an interviewer at the baseline and at 12 weeks of the study.

Flowchart of patient selection for inclusion in the study



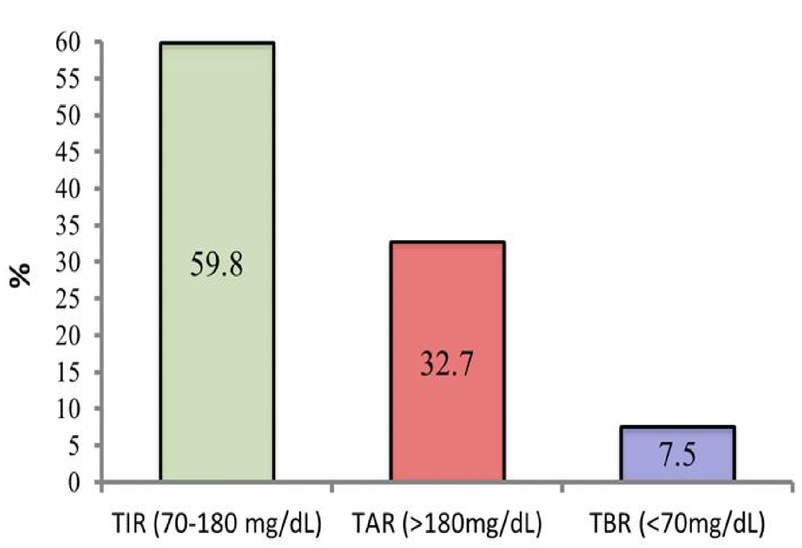
RESULTS

The mean TIR was 59.8 ± 12.6, TAR was 32.7 ± 11.6, and TBR was 7.5 ± 4.3%. The mean glycemic variability SD was 63.2 ± 12.5 mg/dL, and the coefficient of variation (CV) was 41.3 ± 11.4%). At baseline, the HbA1c level was 8.3%, and at 12 weeks, it dropped to 7.9%. The mean glucose level was 198 mg/dL at baseline, and it declined to 185 mg/dL at 12 weeks. The baseline glucose monitoring frequency through BGM was 2.4/day; however, after the patients employed the FSL 2, a higher degree of frequency of glucose monitoring was evident at 12 weeks as 8.2/day. A significant improvements were observed in the DSM subscales at 12 weeks, which principally includes glucose management (P <0.001), dietary control (P = 0.048), physical activity (P = 0.046), health care use (P = 0.024), self-care (P < 0.001) compared to baseline.

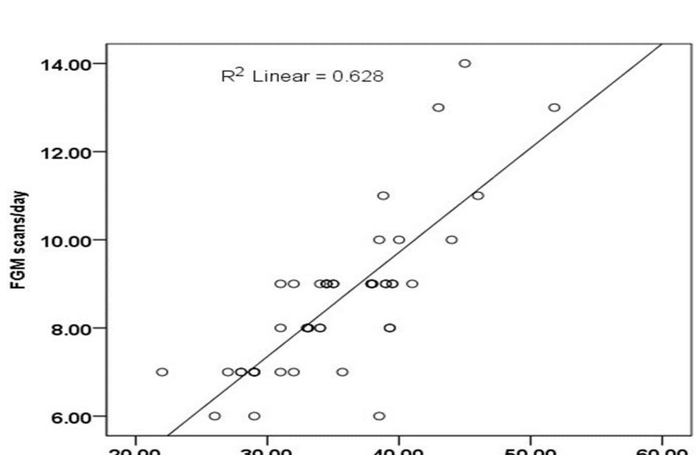
CONCLUSIONS

Using FSL2 was found to raise the patients' DSM levels and improved the metabolic control.

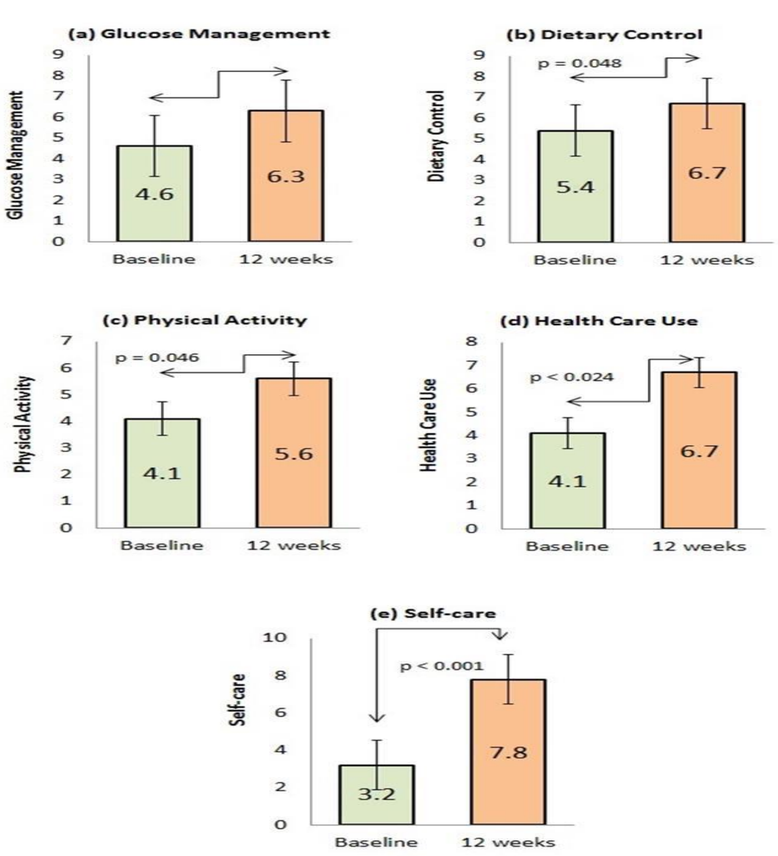
Efficacy of flash glucose monitoring system on metabolic control parameters (SD 63.2 ± 12.5 mg/dL; CV 41.3 ± 11.4%)



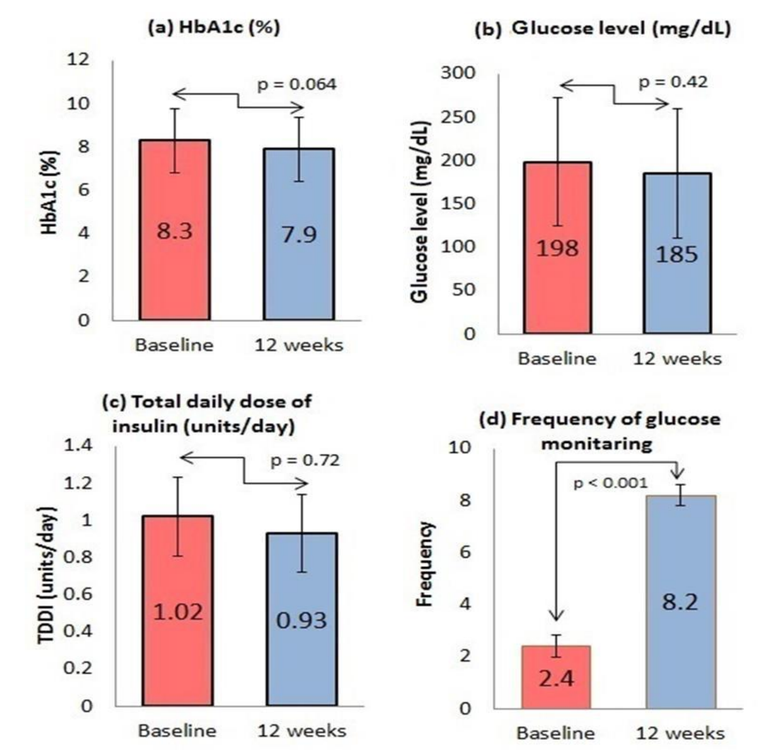
Correlation of time in range and FGM scans/day



Efficacy of flash glucose monitoring system on self-care management behaviours



Baseline vs 12 weeks' comparisons of HbA1c, TDDI , mean glucose levels and frequency glucose monitoring system



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ACKNOWLEDGEMENTS

We thank the study participants for their participation.