The use of Short-Term Continuous Glucose Monitoring System (CGMS) in Diabetic patients

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**Keywords:**  
CGMS  
HbA1c  
Hypoglycemia  
DM

**Introduction**  
CGMS is small sensors inserted subcutaneously, that measures glucose in interstitial fluid and display value with trend continuously for several days. It identifies glucose pattern, by combining with information about diet, activity and drug treatment, it helps to modify treatment. Some studies showed CGMS can improve glycemic control and reduce hypoglycemia in diabetic patients.

**Objectives**  
To study if short-term CGMS improves glycemic control or reduces hypoglycemia in diabetic patients in local hospital

**Methodology**  
We recruited 18 adult Type 1 or Type 2 Diabetes Mellitus patients receiving insulin with or without oral hypoglycemic agents who completed a 6- to 7- day CGMS in 2014. A control group of 18 patients not using CGMS was recruited from same Diabetes nurse specialist clinic. All patients were referred because of hyperglycemia, hypoglycemia or fluctuating glycaemia. CGMS group performed self-monitoring of blood glucose (SMBG), dietary and activity diary during the CGMS period. CGMS data were downloaded and then reviewed by diabetologist and diabetes specialist nurses. Control group patients performed SMBG. Recommendations included insulin adjustment (timing, dosing, and regime) and/or lifestyle advice was then provided to patients in structured setting. HbA1c and number of hypoglycemic events before and 3- 6 months after recommendation provision were recorded.

**Result**  
Mean age of CGMS group is 49.9(range25-72), control group is 52(range19-64).
Mean duration of DM in CGMS group is 16 years (range 5-30) and control group is 12.7 years (range 2-28). For CGMS group, 11 (61%) were male, 7 (39%) were female. For control group, 9 (50%) were in both sex. Mean baseline HbA1c in CGMS group is 8.76% (range 6.3-10.8%); control group is 9.06% (range 7.4-10.9%). Mean post-HbA1c in CGMS group is 8.4% (range 6.6-10%), control group is 8.91% (range 7.2-10.8%). 13 (72.2%) CGMS patients had HbA1c reduction with mean HbA1c reduction of 0.36%; 10 (55.6%) control group patients had HbA1c reduction with mean HbA1c reduction of 0.15%. 91.7% of patients with hypoglycemia before CGMS, whereas 60% of control group patients with hypoglycemia at baseline had reduced hypoglycemia frequency. 1 CGMS patient and 3 control group patients had increased hypoglycemia. This study showed short-term CGMS as additional tool in structured specialist clinic modestly improves glycemic control and reduces hypoglycemia in patients with long history of diabetes. Further study is ongoing to include more subjects and longer follow up time to better evaluate this strategy.