Use of the eGlycemic Management System by Glytec Provides Safe and Effective Transition from IV to SubQ Insulin Therapy by Glytec

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OBJECTIVE

It is well established that hyperglycemia is associated with poor outcomes for hospitalized patients. The transition from intravenous (IV) to subcutaneous (SubQ) insulin therapy can present a challenge for maintaining glycemic control. This study evaluated the glycemic outcomes of patients transitioning from IV to SubQ insulin using either the eGlycemic Management System™ (eGMS) by Glytec or a paper protocol, and post-transition glycemic outcomes on SubQ insulin therapy were measured.

METHODS

The study evaluated 20 patients at Johnson City Medical Center that transitioned from IV to SubQ insulin. Qualifying patients were treated on IV insulin with eGMS. Ten patients transitioned to SubQ using eGMS and ten patients transitioned using a paper protocol (PPT). The efficacy and safety of each was evaluated by the following: (1) Percent of Blood Glucose (BG) between 71-180 mg/dl (2) Percent of BG >180 mg/dl (3) Percent of hypoglycemic events <40, <60, and <70 mg/dl (4) Average BG (5) Standard Deviation.

Figure 1. Transition Data – SubQ first 24 hours post transition

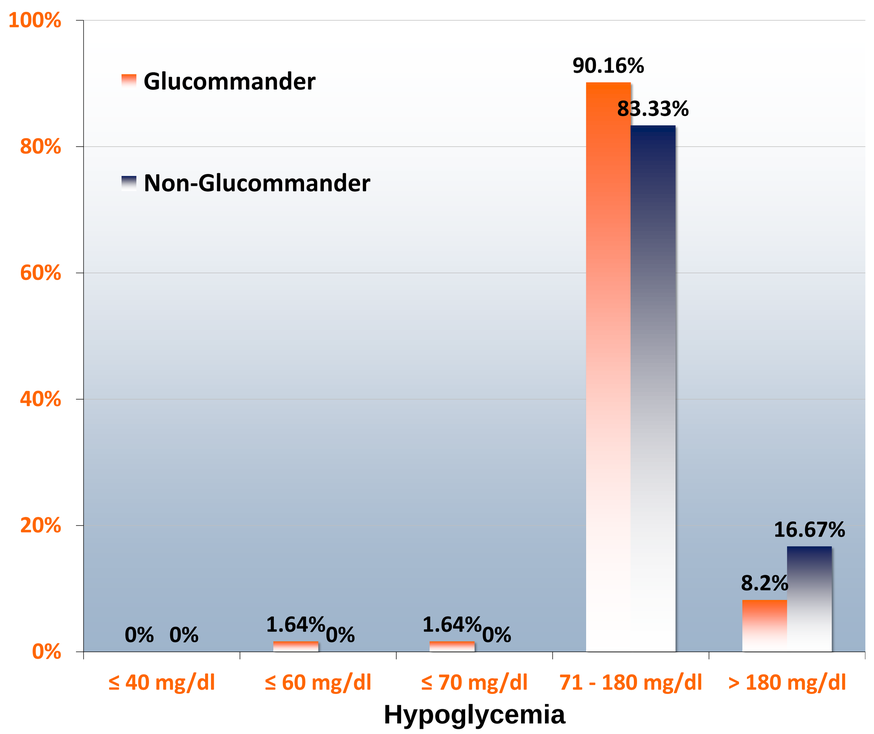

Figure 2. Transition Data – SubQ first 24 hours post transition

Metrics	Glucommander	P-value	Non-Glucommander
≤ 40	0%	NA	0%
≤ 60	1.64%	P > 0.3	0%
≤ 70	1.64%	P > 0.3	0%
71 – 180	90.16%	P > 0.15	83.37%
>180	8.20%	P < 0.02	16.67%
Standard Deviation	21	P < 0.0001	51
Average BG	119	P < 0.02	138
No. Patients	10		10
Avg A1c	6.78		4.87
% diabetes	60%		10%

RESULTS

Patients who transitioned using eGMS had 90.16% of BG values between 71-180 mg/dl in the first 24 hours following transition, compared to PPT at 83.33% NS. BG values greater than 180 mg/dl was 8.2% for eGMS and 16.7% for PPT, P<0.02. Patients who transitioned using eGMS had 92.09% of BG values between 71-180 mg/dl overall following transition, compared to PPT at 79.41% NS. BG values greater than 180 mg/dl with eGMS at 4.52% and 19.4% for PPT P<0.002. The percent of overall hypoglycemic events <40, <60, and <70 mg/dl for eGMS were 0%, 0.56%, and 3.33% and for PPT 0%, 0%, and 1.18%, respectively with all being NS different. Average BG in the first 24 hours following transition on eGMS was 119 mg/dl vs 138 mg/dl on PPT P<0.02. Standard deviation on eGMS in the first 24 hours was 21 vs 51 for PPT P<0.0001. .

CONCLUSION

The patients who transitioned from IV to SubQ insulin utilizing eGMS had significantly less BG values outside 180 mg/dl target range, significantly lower average glucose level, a low incidence of hypoglycemia (<60 mg/dl) and no incidence of critical hypoglycemia (<40 mg/dl). There was also less Standard Deviation with eGMS compared to paper protocol. The results suggest that eGMS can safely transition patients from IV to SubQ insulin therapy while maintaining optimal glycemic control.

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