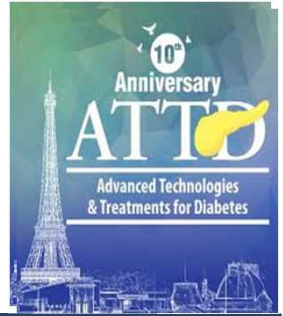


CONTINUOUS SUBCUTANEOUS INSULIN INFUSION (CSII) THERAPY: A COST EFFECTIVE AND EFFICIENT ALTERNATIVE TO INTRAVENOUS INSULIN INFUSION (IVII) THERAPY IN PATIENTS REQUIRING HOSPITALIZATION OR ICU STAY

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Introduction

People with chronic illness, such as diabetes are at increased risk of getting sepsis and may require hospitalization which is a huge psychological and financial burden on patient and patient's family. It will be a boon for the diabetic patient if patient can be managed on outpatient basis without hospitalization. Continuous Subcutaneous Insulin Infusion (CSII) therapy is a valuable innovation to control both Type 1 and Type 2 diabetes. Sepsis in diabetes carry a very high mortality and needs urgent tight control of hyperglycemia.

Objective

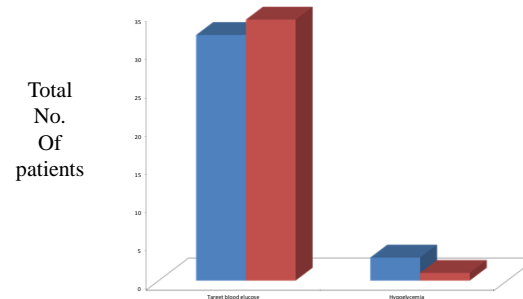
To determine efficacy, safety and cost effectiveness of short term CSII pump therapy vs. conventional IVII therapy among T2D patients with severe Hyperglycemia requiring urgent control

Method

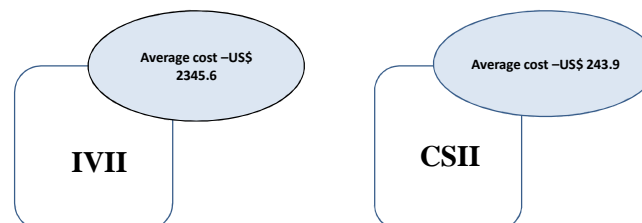
Study subjects included 68 T2D patients, 36 males, 32 females aged between 34 to 80 years on Multiple subcutaneous Insulin and/or oral antidiabetics who presented with Random blood glucose(BG) >450mg/dl & fasting blood glucose > 250mg/dl. These patients were planned for various medical and surgical interventions and were randomized in two treatment groups - 34 patients were treated with continuous IVII (all as in-patient) while 34 patients (out-patient or in-patient) with short term CSII therapy. Their physical examination, CBC, hourly BG, HbA1c, CRP, procalcitonin, liver & kidney profile, ABG, CXR, ECG, microbiology were carried out. Target BG was 100-150mg/dl

Results

In CSII group, 32/34 patients achieved the target BG while it was 100% in IVII group. Severe hypoglycemia (3/34) occurred only in IVII group whereas 1 mild hypoglycemic episode occurred in each group. CSII therapy patients did not require hospitalization for hyperglycemia. The cost of the CSII therapy for 5 days was 13.3% of the total cost of IVII therapy in patients hospitalized for control of hyperglycemia with no need for re-intubation & readmission



Cost analysis



Discussion

CSII is as proficient as IVII therapy for treatment of severe hyperglycemia in T2D. There were lesser episodes of hypoglycemia among patients in the CSII group Vs. IVII therapy so it is safer than IVII therapy. CSII proved to be highly cost effective as compared to IVII as total length of hospital stay was reduced in the CSII group. The cost of the CSII therapy for a period of 5 days was 13.3% of the total cost of IVII therapy in patients hospitalized for control of hyperglycemia.

Conclusion

- Short term CSII is as efficacious as, safer and cost effective than IVII therapy for treating urgent severe hyperglycemia.
- Decrease in hypoglycemia among patients in the CSII group.
- Hospital admission numbers and stay can be reduced by using CSII.

References

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Authors disclosure

none

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