Comparison of Glycaemic control in patients with Type-1 Diabetes Mellitus on CSII therapy with different basal rates

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Background

- Continuous Subcutaneous Insulin Infusion therapy (CSII) can improve glycemic control in patients with Type-1 Diabetes as observed in several studies.
- However, there are very few studies comparing glycaemic control in patients with different basal rates on CSII, so the ideal number of basal rates for a patient is not clear.

Objective

- To compare the glycaemic control between patients with different basal rates.

Methods

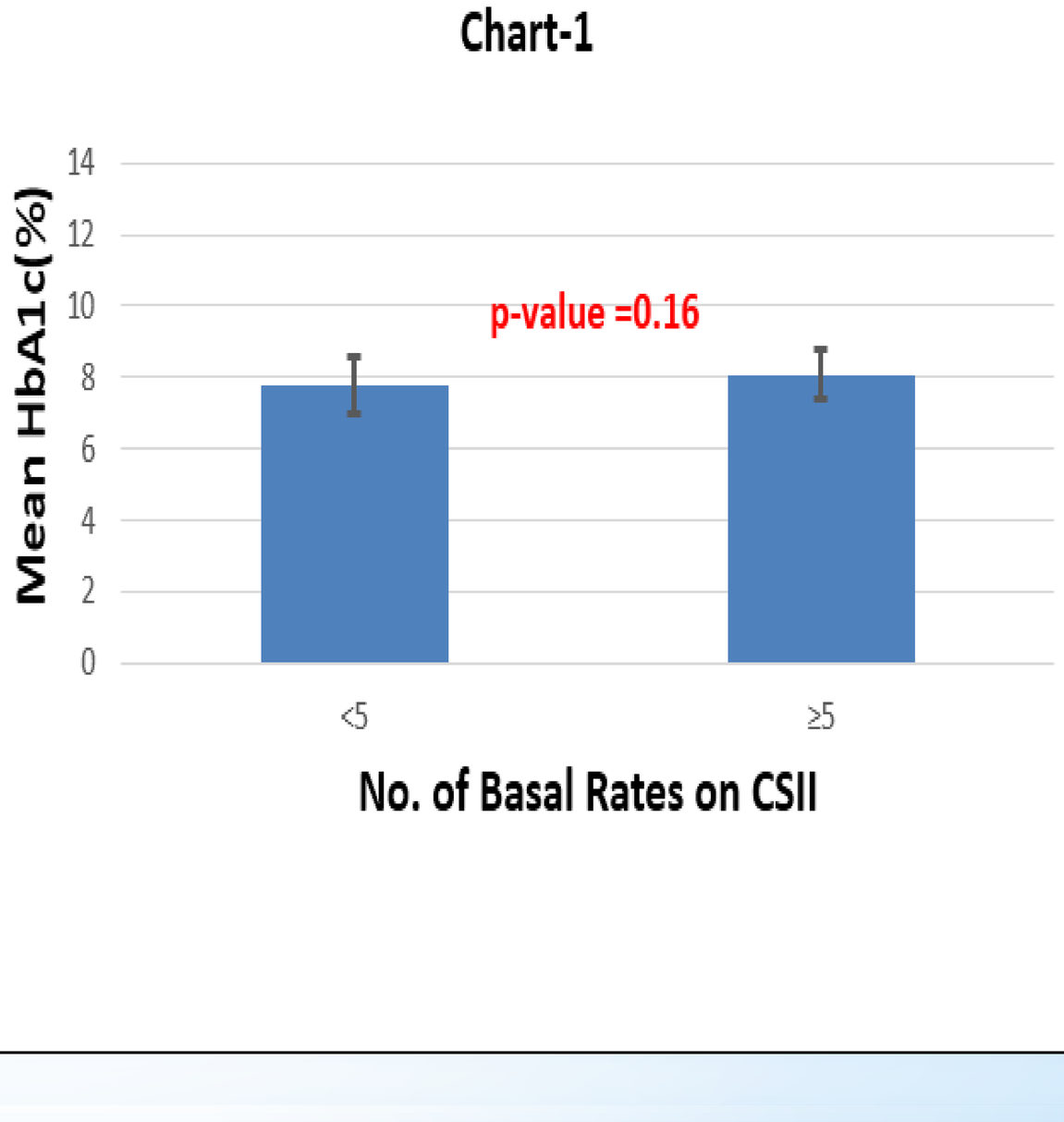
- Data was collected from hospital's database (CELLMA) and by contacting patients via phone.

Results

- 75 patients were evaluated.
- 46(61.3%) were female.
- All had type-1 diabetes except for 2 (1 had type-2 diabetes and the other had diabetes secondary to pancreatic disease).
- Patients were divided in two groups based on those using <5 basal rates and on ≥5 basal rates over 24 hours.
- There were 33 patients in the group on <5 basal rates, 63% were female. Mean age was 42.7±10.3 (mean±SD) years with a BMI of 25.9±3.4 kg/m2. Duration of DM was 19.3±11.0 years and on CSII for 5.5±3.4 years. 30% patients had impaired awareness of hypoglycaemia, 51.5% used temporary (basal) rates and 72.7% used bolus calculator.
- There were 42 patients in the group on ≥5 basal rates, 54.5% were female. Mean age was 38.7±9.3 years with a BMI of 25.9±4.6 kg/m2. Duration of DM was 19.3±9.5 years and of CSII was 4.9±2.9 years. 27.2% patients had impaired awareness of hypoglycemia. 63.2% used temporary (basal) rates and 63.6% used bolus calculator.
- In both groups, similar number of patients (69.6%) experienced at least one episode of hypoglycaemia on average per week.
- Mean HbA1c in those on <5 basal rates was 7.8 ±0.8% (61.7± 9 mmol/mol) versus 8.08±0.7% (64.8±7.7 mmol/mol) in those on ≥5 basal rates. ***p value=0.16***. (Chart-1)

(Note: The most recent HbA1c values were used for calculating mean).

Chart-1



Conclusion

In our study there was no difference in glycaemic control between the patients on fewer(<5) or more(≥5) basal rates. The characteristics of both groups were similar so advice on the optimal number of basal rates for a patient appears to vary from individual to individual.