

INTISARI

Diabetes melitus tipe 2 adalah penyakit metabolik akibat terjadinya resistensi insulin disertai defisiensi insulin relatif sehingga memerlukan insulin yang dapat menurunkan glukosa darah dengan kerja cepat. *Insulin sliding scale* merupakan metode untuk mendapatkan dosis insulin yang sesuai di mana memiliki risiko fluktuasi kadar glukosa darah sehingga terjadinya hipoglikemia (<70 mg/dl). Penelitian ini bertujuan untuk mengetahui frekuensi penggunaan *insulin sliding scale*, pengaruh terhadap pengendalian kadar glukosa darah dan resiko hipoglikemia pada pasien diabetes melitus tipe 2 di RSA UGM.

Penelitian ini merupakan penelitian *cross sectional* dan data penelitian ini diambil secara retrospektif. Subjek penelitian adalah pasien diabetes melitus tipe 2 yang masuk rawat inap periode Maret 2021 - Oktober 2021 yang teridentifikasi menggunakan terapi metode insulin *sliding scale*. Di lakukan penilaian penurunan kadar glukosa darah sewaktu selama di rawat inap serta kejadian hipoglikemia dan hiperglikemia yang terjadi selama pasien dirawat inap. Data yang diperoleh dianalisis secara deskriptif analitik. Pengaruh kadar glukosa darah sebelum dan sesudah pemberian insulin *sliding scale* menggunakan analisis statistik *wilcoxon test* dan hubungan antara variabel pengaruh terhadap kadar glukosa darah menggunakan uji regresi logistik berganda.

Pada penelitian ini, pasien DM tipe 2 banyak dialami perempuan (55,7 %) sedangkan laki-laki lebih sedikit (44,3%) dengan rerata usia 57,6 tahun \pm 9,4. Frekuensi penggunaan insulin *sliding scale* lebih sering digunakan dengan persentase 57,2%. Jenis terapi insulin *sliding scale* yang digunakan adalah kombinasi insulin *sliding scale* dengan insulin *long acting* 55,7%; insulin *sliding scale* tunggal 41,2%; dan kombinasi insulin *sliding scale* dengan *premixed* insulin 3,1%. Sebanyak 67 % pasien tidak mencapai target kadar glukosa darah. Hasil analisis statistik didapatkan ada perbedaan bermakna kadar glukosa darah sebelum dan sesudah pemberian metode terapi insulin *sliding scale* ($p = 0.000$) serta tidak terdapat faktor yang signifikan memengaruhi pengendalian kadar glukosa darah ($p > 0,05$). Tingkat episode hipoglikemia dan hiperglikemia masing-masing adalah 1,21 dan 54,46 per 100 pengukuran kadar glukosa darah. Episode hiperglikemia lebih sering terjadi pada pasien diabetes melitus tipe 2 yang mendapatkan terapi insulin *sliding scale*.

Kata Kunci: diabetes melitus tipe 2, hiperglikemi, hipoglikemi, insulin, *sliding scale*

ABSTRACT

Type 2 diabetes mellitus is a metabolic disease caused by insulin resistance accompanied by a relative insulin deficiency that requires insulin to lower blood glucose rapidly. The insulin sliding scale is a method for obtaining the appropriate insulin dose, which has a risk of fluctuations in blood glucose levels resulting in hypoglycemia (<70 mg/dl). This study aims to determine the frequency of sliding scale insulin use, its effect on controlling blood glucose levels, and the risk of hypoglycemia in type 2 diabetes mellitus patients at RSA UGM.

This study is a cross-sectional study, and the data of this study were taken retrospectively. The research subjects were patients with type 2 diabetes mellitus who were hospitalized from March 2021 – October 2021 and identified using the sliding scale insulin therapy method. An assessment of the decrease in blood glucose levels during hospitalization and the incidence of hypoglycemia and hyperglycemia that occurred during the hospitalization was carried out. The data obtained were analyzed descriptively analytically. The effect of blood glucose levels before and after sliding scale insulin was statistically analyzed with the Wilcoxon test. The relationship between variables of the effect on blood glucose levels was analyzed using multiple logistic regression tests.

In this study, women with type 2 DM were more common (55.7%), whereas fewer men (44.3%) had a mean age of $57.6 \text{ years} \pm 9.4$. The frequency of use of the insulin sliding scale is often used that is equal to 57.2%. The sliding scale insulin therapy used was a combination of sliding scale insulin and long-acting insulin 55.7%; single sliding scale insulin 41.2%; and combination of sliding scale insulin and pre-mixed insulin 3.1%. As many as 67% of patients did not reach the target blood glucose levels. The results of statistical analysis showed that there was a significant difference in blood glucose levels before and after the administration of the sliding scale insulin therapy method ($p = 0.000$), and there were no essential factors affecting the control of blood glucose levels ($p > 0.05$).). The rates of hypoglycemic and hyperglycemic episodes were 1.21 and 54.46 per 100 blood glucose level measurements, respectively. Episodes of hyperglycemia were more common in patients with type 2 diabetes mellitus who received sliding scale insulin therapy.

Keywords: hyperglycemia, hypoglycemia, insulin, sliding scale, type 2 diabetes mellitus