

THE COMBINED EFFECT OF TRIPLE THERAPY WITH SULFONYLUREA, METFORMIN, AND ACARBOSE IN TYPE 2 DIABETIC PATIENTS

Tri Murti Andayani*, AH Asdie**, Mohamed Izham Mohamed Ibrahim***

*Department of Pharmacology and Clinical Pharmacy, Faculty of Pharmacy Gadjah Mada University

**Department of Endocrinology, Dr Sardjito Hospital, Yogyakarta

***School of Pharmaceutical Sciences, Universiti Sains Malaysia

Background

- The goals in the treatment of patients with diabetes are to avoid secondary illnesses for as long as possible by establishing optimal blood glucose levels and to maintain the patient's quality of life for as long as possible

BACKGROUND

- The United Kingdom Prospective Diabetes Study (UKPDS) reported that glycemic control deteriorates over time. Because glycemic control progressively worsens, lifestyle interventions combined with one, then multiple therapeutic agents are needed.
- The UKPDS demonstrated that most patients with type 2 diabetes will need treatment with exogenous insulin at some point during their lifetimes
- Diminished insulin secretion due to declining β -cell function eventually results in a loss of glycemic control obtainable with oral antidiabetic drugs (Raskin *et al.*, 2005)

BACKGROUND

- For patients with type 2 diabetes whose glucose control has deteriorated when on oral hypoglycemic agents, if treated with intensive insulin therapy, they gain marked improvement of glycemia associated with improved insulin secretion and action (Ryan *et al.*, 2004)
- However, the majority of patients in RSUP Dr Sardjito Yogyakarta with a longer duration of diabetes remain poorly controlled with oral agents reluctance to initiate insulin therapy seems partly due to its perceived complexity, the belief that insulin is not effective for type 2 diabetes, and fear of hypoglycemia, which may be the greatest barrier

OBJECTIVE

- The aim of this study was to evaluate the effectiveness and safety of triple therapy with sulfonylurea, metformin, and acarbose

RESEARCH DESIGN AND METHODS

DESIGN

- Observational prospective study

Study Population

- patients with diagnosed type 2 diabetes mellitus who are failing with oral antidiabetic medication and visits to the diabetes outpatient clinic of the department of Endocrinology the Dr.Sardjito Hospital Yogyakarta, Indonesia

Population & Sampel

Inclusion Criteria

- Subjects 18 years of age or older,
- a diagnosis of type 2 diabetes,
- failing with oral antidiabetics (HbA1C > 7.0)
- ability to give informed consent

Exclusion Criteria

- evidence of renal disease (elevated creatinine > 1.4 mg/dl) or a liver diasease (alanin aminotransferase > 2.5 times the upper limit of normal),
- mental incapacity or
- a language barrier precluding an adequate understanding or cooperation with study procedures

DATA ANALYSIS

EFFECTIVENESS

- Fasting plasma glucose, A1C (baseline, months 3, and month 6)
- vital sign and weight monitor at each visit.
- The primary end point is the reduction in HbA1C values from baseline to the end of the study

SAFETY

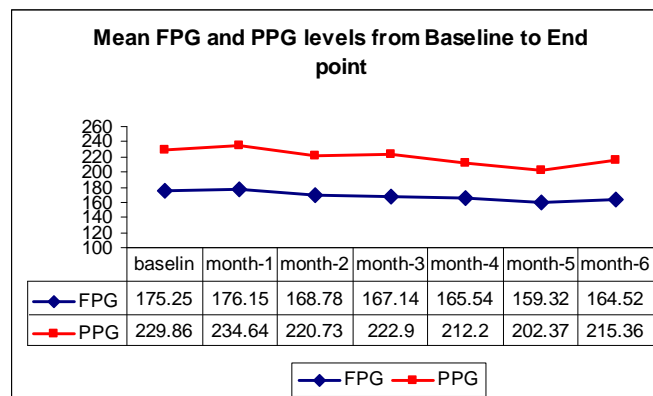
- general physical examination (weight, BP)
- clinical laboratory evaluations, and
- reporting of adverse events and hypoglycemic episodes at baseline and month 6

RESULT

Table 1. Baseline characteristics of patients

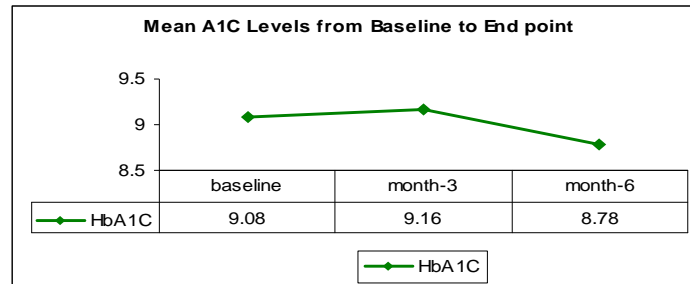
n	54
Age (years)	61.28 ± 7.62
Men/women	24/30
Diabetes duration (years)	13.32 ± 7.82
A1C (%)	9.08 ± 2.00

Glycemic Control



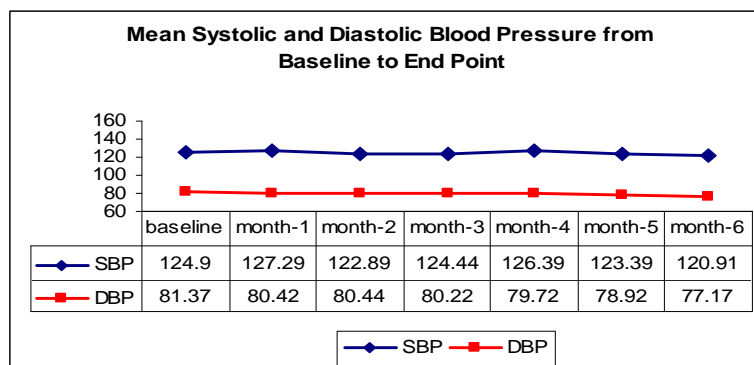
- FPG decreased 10.73 mg/dL from baseline to end point (p=0.375)
- PPG decreased 14.5 mg/dL from baseline to end point (p= 0.817)

Glycemic Control

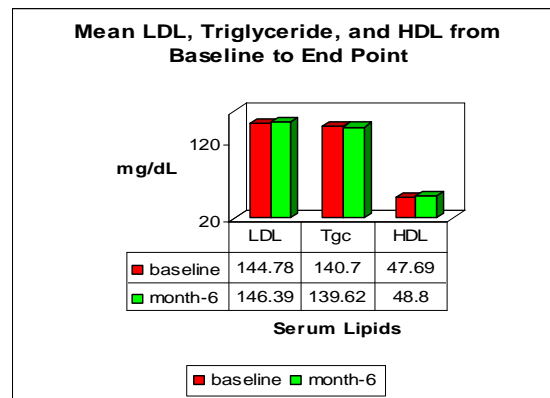


- A1C decreased 0,3% (p=0.285)
- An A1C value of $\leq 7\%$ was achieved by 12 patients

Blood Pressure



Serum Lipids



ADVERSE DRUG REACTION

ADR	Prevalence
Flatulence	40.74%
Adominal discomfort	22.22%
Diarrhea	1.85%
Minor hypoglycaemia	24.07%
Major hypoglycaemia	1.85%

CONCLUSION

- A1C, FPG, and PPG was reduced from baseline to end point but no significant difference
- Acarbose was more frequently associated with flatulence (40.74%), and metformin with diarrhea (1.85%) and abdominal discomfort (22.22%).