

ABSTRACT

Effect of Telmisartan on Insulin Resistance in Hypertensive patients with End-Stage Renal Disease and Regular Hemodialysis (Study in Hemodialysis Unit of Bhayangkara Hospital - H.S. Samsorei Mertojoso H.S. Surabaya)

BACKGROUND: Patients with end-stage renal disease (ESRD) are known to have insulin resistance, which is closely associated with atherosclerosis and other cardiovascular mortality. Telmisartan as one of the angiotensin receptor blocker mostly known for its antihypertension activity, has been reported to have beneficial effect on reducing insulin resistance through its activity as a partial agonist of PPAR- γ . However, such effect has never been clarified in hemodialysis patient. We evaluated the effect of Telmisartan on Insulin resistance in hypertensive patient with ESRD and regular hemodialysis.

OBJECTIVES: To analyze the effect of Telmisartan on Insulin resistance in hypertensive patients with end-stage renal disease and regular hemodialysis which is indicated by fasting plasma glucose level, fasting plasma insulin level, and HOMA-IR.

METHODS: This observational prospective study was carried in hemodialysis unit of Bhayangkara Hospital in Surabaya from June-November 2016. Patients who meet the inclusion criteria were treated daily with 80 mg of per oral telmisartan for 12 weeks. Then the changes of fasting blood glucose level, insulin plasma level, and HOMA-IR were evaluated.

RESULTS: There are 16 patients met inclusion criteria of the study (12 males and 4 females). Telmisartan significantly reduced insulin plasma level ($7,09 \pm 4,11$ to $5,03 \pm 3,15$ uU/dl, $P=0,001$), and HOMA-IR ($1,69 \pm 1,28$ to $1,11 \pm 0,79$, $P=0,002$). However, it did not significantly affect fasting plasma glucose level (89.06 ± 20.06 to 84.56 ± 10.91 mg/dl, $p=0,187$).

CONCLUSION: In this study, we found that telmisartan can reduce the insulin resistance in hypertensive patient with End-Stage Renal Disease and Regular Hemodialysis.

KEYWORDS: Telmisartan, ESRD, Hemodialysis patients, Insulin resistance.