



# GINJAL HIPERTENSI

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# HUBUNGAN PENINGKATAN KADAR TGF- $\beta$ 1 PADA PENDERITA HIPERTENSI ESENSIAL DENGAN FUNGSI GINJAL DITINJAU DARI MIKROALBUMINURIA DAN LAJU FILTRASI GLOMERULUS

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## Abstrac

**Background:** Cardiorenovascular diseases has been a major problem not only in western countries but also in the developing countries. Left ventricural hypertrophy and diminish renal function are targeted organ damages from hypertension that previously stated they associated with the role of transforming growth factor-beta1(TGF- $\beta$ 1) in white and black races in western countries. This study was conducted to determine the increased level of TGF- $\beta$ 1 from hypertensive patiens and the association of it with renal function as it describes by microalbuminuria and glomerular filtration rate.

**Method:** Twenty seven patiens with hypertension were enrolled in this study. Another 27 patients were included as control subjects. TGF- $\beta$ 1 level was determine using sandwich Elisa technique. Microalbuminuria from 24 h urine collection was measured by radioimmunoassay (RIA) and the GFR measured using radioisotope imaging. Pre study laboratories and physical exam also withdrawn for baseline data. The association among TGF- $\beta$ 1 level, hypertension and renal function were than calculated.

**Results:** The mean of TGF- $\beta$ 1 level in control group was  $22.51 \pm 10.08$  ng/m, whereas in the hypertensive group much higher  $40.3 \pm 12.38$  ng/mL. ( $p < 0.001$ ). The median's rate of mikroalbuminuria was 75 mg/24 hours (49-127), and the average's rates of GFR was  $76.3 \pm 18.4$  mL/mnt/ $1.73m^2$ . There were no correlation's between TGF- $\beta$ 1 and mikroalbuminuria ( $p = 0.637$ ), between TGF- $\beta$ 1 and GFR 0.2437 ( $p = 0.221$ ) and also between mikroalbuminuria and GFR  $-0.069$  ( $P = 0.732$ ). To find which factors influenced this results we used the regression multiple methods. We found that the duration of hypertension influenced mikroalbuminuria with  $r_{multiple} 0.504$  ( $p = 0.03$ ). Age and MAP were the factors that influenced GFR with  $r_{multiple} 0.684$  ( $p = 0.002$ ).

**Conclusions:** There was a significant increased of TGF- $\beta$ 1 level in hypertensives, but there were no correlations between TGF- $\beta$ 1 level, mikroalbuminuria and GFR in hypertensive patients. TGF- $\beta$ 1 level influenced by body mass index. Mikroalbuminuria was influenced by the duration of hypertension and GFR was influenced by age and MAP.

**Key words:** TGF- $\beta$ 1, hypertension, mikroalbuminuria, GFR