

# The differences of serum complements and anti-dsdna levels between renal and non-renal manifestations in systematic lupus erythematosus

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## Abstrak

**Background.** Systemic lupus erythematosus (SLE) has diverse clinical manifestations, including renal and non-renal. Renal manifestation is related to significant morbidity and mortality. SLE is also characterized by serological aberrations, including levels of complement C3, C4 and anti-dsDNA, but the association of them with clinical manifestations including renal and non-renal is unclear. This study investigated the associations of C3, C4 and anti-dsDNA levels with renal and non-renal manifestations in SLE patients.

**Method.** A cross-sectional study was conducted in the Polyclinic of Rheumatology, Dr. Saiful Anwar Hospital Malang. A number of 43 subjects fulfilled the 1997 American College of Rheumatology criteria participated in this study, that consisted of 11 patients with renal manifestation and 32 patients with non-renal manifestations. Serum C3 and C4 levels were measured using immunoturbidimetry, and serum anti-dsDNA levels were measured using enzyme-linked immunosorbent assays (ELISA). The independent T-test was used to compare C3 levels and the Mann-Whitney U test was used to compare C4 and anti-dsDNA levels between groups.

**Result.** SLE with renal manifestation had significant lower levels of serum C3 compare to non-renal manifestations (mean  $\bar{X} \pm SD$ : 71.27  $\bar{X} \pm 32.65$  mg/dL and 94.47  $\bar{X} \pm 26.29$  mg/dL respectively,  $p=0.022$ ). SLE with renal manifestation also had significantly lower levels of serum C4 compare to non-renal manifestations (mean  $\bar{X} \pm SD$ : 14.55  $\bar{X} \pm 8.20$  mg/dL and 25.50  $\bar{X} \pm 11.05$  mg/dL respectively,  $p=0.002$ ). Conversely, SLE with renal manifestation had significantly higher levels of serum anti-dsDNA compare to non-renal manifestations (mean  $\bar{X} \pm SD$ : 249.27  $\bar{X} \pm 240.34$  IU/mL and 109.91  $\bar{X} \pm 166.11$  IU/mL respectively,  $p=0.014$ ).

**Conclusion.** SLE patients with renal manifestation have significantly lower levels of serum C3 and C4 and a higher level of serum anti-dsDNA than SLE patients with non-renal manifestations.