

## CORRELATION BETWEEN GLICATED HEMOGLOBIN AND CYSTATIN C IN TYPE 2 DIABETES

### ABSTRACT

**Background:** Diabetic nephropathy is a complication of type 2 diabetes (DMT2) which occurs in 20% -40% of patients and is the sole cause of *end stage renal disease* (ESRD). Evaluation of renal function in the early stages of diabetic nephropathy can reducing progression of kidney disease. The level of serum cystatin C may be used for early detection of diabetic nephropathy. Chronic hyperglycemia is one of the causes of diabetic nephropathy. Glycated hemoglobin is a marker that is checked to control glycemic status. HbA1c levels were increased in theory is closely related to an increased risk of nephropathy in diabetes mellitus. The aim of this study to determine the correlation levels of HbA1c and cystatin C in type 2 diabetes.

**Methods:** This study was an analytical study with cross-sectional design of the 19 patients with type 2 diabetes who come to the central laboratory examination to Dr. M. Djamil Padang began in June 2015 to March 2016. HbA1c levels measured by Ion exchange methods - High performance liquid chromatography (HPLC), while cystatin C by *particle-enhanced nephelometric immunoassay* (PENIA). method. Data were analyzed using a computer program with a Pearson correlation test. Statistical significance is determined if the value  $p < 0.05$ .

**Results:** The mean HbA1c levels in the study subjects was 7.6% (1.25). The mean levels of cystatin C is 1.07 (0.18) mg /L, and obtained an increase in cystatin C in 13 subjects (68.4%). Pearson correlation test result strong positive correlation between HbA1c and cystatin C with  $r = 0.68$ ,  $p = 0.01$ .

**Conclusion:** There is a strong positive correlation between the levels of HbA1c and cystatin C levels in patients with type 2 diabetes.

**Keyword:** Type 2 Diabetes mellitus, HbA1c, cystatin C