

ABSTRACT

EFFECT OF INCREASING BLOOD GLUCOSE CONCENTRATION INTO SOME ATHEROGENIC FACTORS WITH BIOMOLECULAR STUDY AMONG DIABETES MELLITUS TYPE 2 PATIENTS

Type 2 diabetes mellitus was a degeneration disease which become health problem in Indonesia as well as in the world. because of that DM type 2 cases have increased year by years, There are some risk increasing welfare. change of food habit & less physical activity that factor to predisposition of increase incidence DM type 2, Laboratory finding of DM type 2 were uncontrolled hyperglycemia as glucotoxicity, Therefore it will cause macro-microvascular disorders. and tissues damage, Insulin Resistance & beta cell dysfunction were as etiology of hyperglycemia in DM type 2 patient. Then high intracellular glucose and excessive mitochondrial superoxyde production will also cause DNA damage, Poly-ADP Ribose Polymerase (PARP) activation, Glyceraldehyde Phosphat dehydrogenase (GAPDH) inhibiton. Therefor GAPDH pathway disorders reaction mechanism of complication in DMT2 suchas :Polyol pathway. PKC (via DAG) activation. and increasing hexokinase pathway flux. then molecular affect his express such as Intracellular Adhesive molecule-1 (ICAM-1), Nitrit Oxide (NO). glutathion peroxidase (GPX), Finally this process. will be endothel disfunction, The aims of the study. to observe molecular effect of blood glucose increase to atherogenic factors among DM type 2 patients

The observasional study was carried will cross sectional study comparative. the subjects were a DM type 2 patients 30-60 years old, Blood glucose were determined by enzymatic method HbA1c were examined by variant hemoglobin testing system technique, Examination of PARP. ICAM-1. NO & GPX have done by enzyme linked Assay (ELISA), Date were analyzed statistically by using t-test & chi square test,

It was found that the a very value of PARP activity in DM type 2 group were 457 ± 81.34 Unit/ μ l that PARP activity in non DM group were 214 ± 75.54 Unit/ μ l, The mean ICAM-1 concentration in DM type 2 group were 670.93 ± 192.44 ng/ml. that ICAM-1 in non DM 360.01 ± 137.56 μ g/ml, The mean value of NO concentration among DM type 2 group were 19.26 ± 9.16 μ mol/L. while NO concentration in non DM were 44.10 ± 19.84 μ mol/L, The average of GPX activity in DM type 2 subjects were 12.42 ± 21.03 μ Unit/ml. that in non DM were 121.51 ± 89.07 μ Unit/ml,

The result showed that there was a significant difference between DM type 2 group and non DM group. there was a significant correlation between increasing PARP activity with increasing ICAM-1 concentration, These was also significant relationship between increasing PARP activity with decreasing NO concentration, Finally it was found significant correlation between increasing PARP activity with decreasing GPX activity, Conclusion of the result showed that PARP activity and level of ICAM-1 were increased. Also level of NO and GPX activity were decreased on DM type 2 group compared with non DM group, There was a significant correlation between PARP activity with ICAM-1 level, PARP activity with NO level. and PARP activity with GPX activity, Key words. DM tipe 2.hyperglycemia.endothel. PARP. ICAM-1. NO. GPX