

## **ABSTRACT**

### **AIM:**

To determine the association between K469E ( rs5498) polymorphism of ICAM-1 gene and sight threatening diabetic retinopathy.

### **MATERIALS AND METHODS:**

Type 2 diabetic patients attending PSGIMSR ophthalmology OPD were evaluated using 90D slit lamp biomicroscopy /Indirect ophthalmoscope to select 100 patients with type 2 diabetic retinopathy. After informed consent ,grading of diabetic retinopathy with 30 degree 7 field fundus photograph by ETDRS classification was done. Patients with mild and moderate non proliferative diabetic retinopathy were classified as Non sight threatening diabetic retinopathy and those with severe non proliferative diabetic retinopathy, proliferative diabetic retinopathy, Clinically significant macular edema were classified as Sight Threatening Diabetic Retinopathy. Gene analysis was done in 2 ml of blood using PCR RFLP to detect K469E ( rs5498) polymorphism of ICAM-1 gene and results were analysed.

### **RESULTS:**

The overall prevalence of sight threatening diabetic retinopathy among the study population is 52% and the prevalence of Non Sight diabetic Threatening Retinopathy among the study population is 48%. The frequency distribution of AA,AG and GG in our study population is 25%,56%,21% respectively. Among the patients with Non Sight

Threatening Diabetic Retinopathy,22.9% had AA genotype,56.2% AG genotype and 22.9% had GG genotype. The frequencies of three different genotypes among the patients with Sight Threatening Diabetic Retinopathy are 26.9%- AA,53.8%-AG,19.3% - GG. There was no significant difference in the frequency of alleles and genotype of ICAM -1 K469E Polymorphism among sight threatening and non sight threatening retinopathy.

The unadjusted risk of developing sight threatening diabetic retinopathy increased by 1.96 times among diabetic patients with GG genotype of ICAM-1K469E polymorphism with elevated glycosylated haemoglobin levels in this study population. No association was observed between any of the genotypes of ICAM-1K469E polymorphism and the development of sight threatening diabetic retinopathy after adjusting for various clinical confounding factors.

## **CONCLUSION:**

ICAM K469E polymorphism predisposes patient to develop diabetic retinopathy, it has no role in the development of sight threatening diabetic retinopathy