**Analysis of Genetic predispositions for Cognitive decline after Cardiac Surgery**

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**ABSTRACT**

**Objective:** To analyze the effect of Apo lipoprotein E-ε4 allele mediated genetic predispositions on cognitive impairment in patients with post-cardiac procedures.

**Study Design:** A cohort observational study design.

**Place and Duration:** From 1st Aug 2020 to 1st Jan 2021 at Cardiac Surgery Department of Ch. Pervaiz Elahi Institute of Cardiology, Multan**.**

**Methodology:** Patients undergoing coronary bypass surgery wereevaluated for Apo lipoprotein E-ε4 allele based post-operative cognitive dysfunctionality. The major outcomes of the study were analyzed on the basis of cognitive performance at two levels mainly at pre-coronary surgery and post-coronary surgery after an interval of 07 weeks.

**Results:** The genotyping of the patients (n=45) revealed the presence of the APOE ε4 allele in 73% and absence in 27% of the total patients respectively. Results show that no statistically significant difference was observed in the mean values of the descriptive variables or the baseline psychological measurement scores (means) for both the presence and absence of Apo lipoprotein E-ε4 respectively. The multivariable logistic regression analysis revealed no significant relationship with age. However, a significant relationship was observed between the presence of APOE-ε4 allele and cognitive dysfunction in patients who underwent coronary surgery after an interval of 7 weeks.

**Conclusion:** A significant correlation is observed between the presence of APOE-ε4 allele and cognitive dysfunction in patients who underwent coronary surgery after an interval of 7 weeks. Moreover, no significant relationship was observed with age.

**Keywords:** Cardiac surgery, Apo lipoprotein E (APOE), E-ε4 allele, Cognitive decline, Genetic predispositions, Postoperative cognitive dysfunction (POCD)

**How to Cite This:**

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