## A21 ANTI-APOLIPOPROTEIN A-1 AUTOANTIBODIES AS AN INDEPENDENT CARDIOVASCULAR PROGNOSTIC MARKER AFFECTING BASAL HEART RATE IN MYOCARDIAL INFARCTION

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**Background** Apolipoprotein A-1 (Apo A-1) is the major protein fraction of high-density lipoproteins whose protective role in the cardiovascular system has been established. Anti-Apo A-1 IgG autoantibodies were described in autoimmune disorders such as systemic lupus erythematosus and antiphospholipid syndrome and might be involved in the genesis of arterial and venous thrombotic events. Anti-Apo A-1

IgG have been reported in myocardial infarction (MI) without autoimmune disease, but their clinical significance remains undetermined.

**Aims** To assess the prognostic value of anti-Apo A-1 IgG after MI as a predictor of major cardiovascular events (MACE) at 12 months and to determine their association with resting heart rate (RHR), a well established prognostic feature after MI.

**Methods and Results** 221 consecutive patients with MI were prospectively included and all completed a 12-month follow-up. MACE consisted in death, MI, stroke or hospitalisation either for an acute coronary syndrome or heart failure. RHR was obtained on Holter the day before discharge under the same medical treatment. Neonate rat ventricular cardiomyocytes (NRVC) were used in vitro to assess the direct anti-Apo A-1 IgG effect on RHR. During follow-up, 13% of patients presented a MACE. Anti-Apo A-1 IgG positivity was 9% and was associated with a higher RHR (p=0.0005) and higher MACE rate (adjusted OR:3.6; 95% CI 1.2 to 11; p=0.02). Survival models confirmed the significant nature of this association. Patients with MACE had higher median anti-Apo A-1 IgG values at admission than patients without (p=0.07). On NRVC, plasma from MI patients and monoclonal anti-Apo A-1 IgG induced an aldosterone and dose-dependent positive chronotropic effect, abrogated by Apo A-1 and therapeutic immunoglobulin (IVIG) preincubation.

**Conclusions** In MI patients, anti-Apo A-1 IgG is an independent predictor of MACE at 1-year, interfering with a currently unknown aldosterone-dependent RHR determinant. The authors hypothesise that anti-Apo A-1 IgG represents an innovative biomarker allowing the identification of a specific MI patient population susceptible to benefit from IVIG therapy.