BIOPSY-PROVEN MYOCARDITIS: GENDER DIFFERENCES AND SERUM AUTOANTIBODY MARKERS OF DISMAL PROGNOSIS.

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Prognostic features in endomyocardial biopsy (EMB)-proven myocarditis remain poorly defined. **Purpose:** We assessed role of gender and of serum anti-heart (AHA), anti-intercalated disk (AIDA), anti-endothelial (AECA) and anti-nuclear autoantibodies (ANA) at diagnosis as possible predictors of death or heart transplantation (HTx).

**Methods:** Our prospective cohort studied 250 myocarditis patients, 87 female, aged 37 ± 24 years, follow-up 57 ± 49 months. Polymerase chain reaction (PCR) was used to detect viral genomes on EMB. AHA (organ-specific, partially organ-specific or cross-reactive types) and AECA, AIDA, ANA were detected by indirect immunofluorescence on human heart and skeletal muscle. Univariate and multivariable Cox regression analyses for death or HTx status were used.

**Results:** At last follow-up in May 2012, 179 patients were alive, 38 were dead or transplanted, 33 were lost to follow-up. In 20% of cases viral PCR was positive. Frequencies of positive antibody tests were: AHA 55%, AIDA 17%, ANA 17%, AECA 10%. Actuarial survival at 6 years was lower in females (72% vs 87%, p=0.02) Females had higher frequency of family history of heart disease (45% vs 26%, p=0.003), extra-cardiac autoimmune disease (p=0.008), presentation with heart failure (p=0.01), higher NYHA class (p=0.03), higher frequency (p=0.009) and higher titer ANA (p=0.03). Univariate predictors of death/HTx in the whole cohort were: longer symptom duration, giant cell myocarditis, NYHA II-IV, presentation with ventricular dysfunction/symptomatic heart failure, instrumental] indexes of biventricular dysfunction, positivity for AECA and ANA. Independent predictors were female gender (p=0.01), young age (p=0.04), high titre ANA (p=0.001), high titre organ-specific AHA (p=0.02), lower echocardiographic LV ejection fraction at diagnosis (p=0.000).

**Conclusions:** In EMB-proven myocarditis, an autoimmune pathogenesis, identified by high titer organ-specific AHA and ANA, is associated with a dismal prognosis, particularly in young females. This may reflect the well-known predilection of autoimmune disease for the female gender.