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%. Acturial 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.