# Serum autotaxin level predicts future cardiac events in patients with dilated cardiomyopathy

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**Background:** Autotaxin (ATX) has been reported to promote myocardial inflammation and subsequent cardiac remodeling through lysophosphatidic acid (LPA) production. However, the prognostic impact of ATX has not been clarified in dilated cardiomyopathy (DCM).

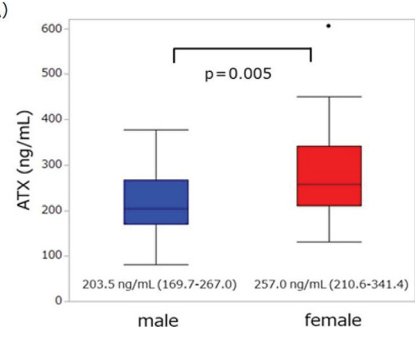
**Purpose:** We aimed to investigate the prognostic impact of ATX in patients with DCM.

**Methods:** We enrolled 104 DCM patients (49.8 years, 76 males). The subjects underwent blood sampling, echocardiography, cardiac catheterization, and endomyocardial biopsy. Gender differences in serum ATX levels have been reported, thus we divided the subjects into two groups using median serum ATX levels for men and women: High-ATX group and Low-ATX group. All patients were followed up by expert cardiologists. The cardiac event was defined as a composite of cardiac death and hospitalization for worsening heart failure.

**Results:** Eighty-nine percent of the subjects were classified as New York Heart Association functional class I or II. Female patients had higher serum ATX levels than male patients, with median values of 257.0 ng/mL and 203.5 ng/mL, respectively (Figure A). The average left ventricular ejection fraction and brain natriuretic peptide levels were 30.6% and 122.5 pg/mL. In survival analysis, cumulative event-free probability was significantly lower in High ATX group (p=0.007, Figure B). In Cox proportional hazards analysis, High-ATX was one of the independent predictors of composite cardiac events (Hazards Ratio, 2.575; p=0.043). On the other hand, high sensitive C-reactive protein and collagen volume fraction in myocardial samples were not significant predictors.

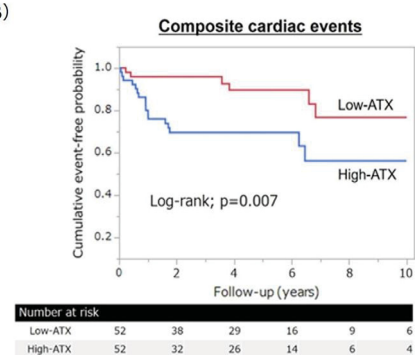
**Conclusion:** High serum ATX level was associated with poor prognosis in patients with DCM.

(A)




Gender difference in autotaxin levels

(B)




Survival analysis of cardiac events