

**Presentation****Number:** 948-17**Abstract Title:** Left Atrial Mechanics in Type 2 Diabetics**Presentation Start/End Time:** Monday, Mar 13, 2006, 9:00 AM -10:00 AM**Topic:** Tissue Imaging**Author Block:** Maria J. Eriksson, Christina Jarnert, Pernilla Jacobsson, Margareta Ring, Lars E. Ryden, Kenneth Caidahl, Anders Melcher, Karolinska University Hospital, Stockholm, Sweden**Background:** Left ventricular (LV) diastolic dysfunction is prevalent in Type 2 Diabetes. We applied a new 2-D based quantitative technique to evaluate the mechanics of the LA walls in relation to established Doppler-derived indexes of diastolic function and LA volume changes.**Methods:** 29 patients with uncomplicated Type 2 Diabetes, mean age 59±7 years, with normal systolic LV function and no hypertrophy or mitral regurgitation, underwent Doppler-echo. LA wall deformation was evaluated by a new 2-D based technique (Velocity Vector Imaging, VVI; Siemens). Mitral inflow velocities (E and A wave) and tissue velocity in the septal part of the mitral annulus (E' waves) were measured and E/A and E/E' ratios were calculated. VVI measurements included systolic strain (LA-Strain) and systolic (LA-SRs) and diastolic strain rate (LA-SRe and LA-SRa) for septum (Sep), lateral wall (Lat) and LA roof (Roof). LA ejection fraction (LA-EF) was calculated.**Results:** Mean values for E/A 1.1±0.4, E/E' 7.6±2.1 and LA EF 53±8%. E/A correlated to age (-0.55, p<0.01), while E/E', LA-Strain or LA-SR did not. E/E' related to the minimal LA Vol (r=0.58, p<0.01), and LA EF (r=-0.54, p<0.01). Table shows correlations between LA-Strain, LA-SR and E/A, E/E', LA-EF. LA-SRe and LA-SRa correlated neither to LA-EF nor to E/A or E/E' for any atrial wall.**Conclusions:** LA strain and strain rate for all atrial walls are related to established measures of diastolic LV function in terms of E/A and E/E', and LA emptying in patients with uncomplicated Type 2 Diabetes.

	LA-Strain Sep	LA-Strain Lat	LA-Strain Roof	LA-SR Sep	LA-SR Lat	LA-SR Roof
E/A	r=0.43 p<0.05	r=0.42 p<0.05	r=0.51 p<0.001	r=0.46 p<0.05	r=0.35 p=0.07	r=0.48 p<0.01
E/E'	r=-0.46 p=0.01	r=-0.42 p<0.05	r=-0.45 p=0.01	r=-0.42 p<0.05	r=-0.51 p<0.01	r=-0.46 p=0.01
LA-EF	r=0.61 p=0.0003	r=0.61 p=0.0003	r=0.62 p=0.0002	r=0.62 p=0.0002	r=0.58 p=0.0007	r=0.63 p=0.0002

**Keywords:** Atrial function, Diastole, Diabetes mellitus