Prevention

ASSOCIATION OF HIGH SERUM GLUCOSE LEVELS WITH LOW HDL CHOLESTEROL LEVELS IN NON-DIABETIC HYPERTENSIVE PATIENTS: IMPLICATIONS FOR THE DEVELOPMENT OF NEW DIABETES

ACC Moderated Poster Contributions
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Background: Low HDL during treatment is strongly associated with development of new diabetes in hypertensive patients. Whether low HDL per se is associated with elevated serum glucose in the absence of diabetes is unclear.

Methods: Baseline and annual serum glucose levels were examined as a function of sex-specific quartiles of HDL in 6953 LIFE study patients with no history of diabetes who did not develop diabetes during the study. Patients were randomized to losartan vs atenolol-based treatment, with additional hydrochlorothiazide (HCTZ) therapy added as needed.

Results: Serum glucose was highest in the quartile with lowest HDL at baseline and throughout the study and decreased across quartiles of HDL (Table). The association between low HDL and elevated serum glucose was highly significant at baseline and each year of the study and was independent of randomized treatment allocation, in-study treatment with HCTZ and statins, body mass index, serum creatinine and uric acid, blood pressure and ECG left ventricular hypertrophy.

Conclusions: Low HDL levels are associated with elevated serum glucose levels during antihypertensive therapy, independent of the potential impact of treatment with losartan vs atenolol, HCTZ and statins, and of other potential factors that could influence glucose levels. These findings suggest that low HDL per se may be a stimulus to development of abnormal glucose tolerance and provide insights into the relationship between low HDL and development of diabetes.

Time	HDL Quartile 1 ≤1.22 men ≤1.30 women	HDL Quartile 2 1.08-1.29 men 1.31-1.58 women	HDL Quartile 3 1.30-1.55 men 1.59-1.89 women	HDL Quartile 4 >1.55 men >1.89 women	Overall p value	Adjusted p value*
Baseline (n=6953)	5.62±1.10	5.37±0.90	5.38±0.91	5.31±0.88	<0.001	<0.001
Year 1 (n=6846)	5.68±1.07	5.50±0.91	5.45±0.91	5.45±0.88	<0.001	0.001**
Year 2 (n=6557)	5.68±1.08	5.56±0.97	5.48±0.93	5.50±0.94	<0.001	0.009**
Year 3 (n=6355)	5.76±1.05	5.61±1.04	5.56±0.94	5.54±0.90	<0.001	0.006**
Year 4 (n=6134)	5.77±1.07	5.65±0.99	5.58±0.92	5.49±0.92	<0.001	0.003**

*adjusted for randomized treatment, race, prior antihypertensive therapy, body mass index, serum creatinine and uric acid, diastolic and systolic pressure, Cornell product left ventricular hypertrophy, hydrochlorothiazide and statin use at each time
**also adjusted for baseline serum glucose level