GlycA has been associated with future cardiovascular (CV) risk among patients with or without pre-existing coronary artery disease (CAD).

Whether GlycA is an independent and additive risk predictor from other known inflammatory markers, such as high sensitivity C-reactive protein (hsCRP) needs further study.

Patients (N=2,996) in the Intermountain Heart Collaborative Study who were >18 years of age, underwent angiography for coronary artery disease (CAD) determination, and had plasma levels of GlycA and hsCRP were studied.

Baseline GlycA was determined by nuclear magnetic resonance (NMR) spectroscopy. Baseline hsCRP testing was performed with hsCRP Elisa by Sigma Aldrich (Cat #SE120041).

METHODS

Baseline GlycA and hsCRP concentrations were stratified into high and low categories by their median values:

GlycA: median = 339 µmol/L (<339, n=1,493; IQR: <281, >281)
hsCRP: median = 6.25 mg/L (<6.25, n=1,499; >6.25, n=1,493; IQR: <5.26, >5.26)

Categories of low and high GlycA and hsCRP were made to determine associations to endpoints:

Low GlycA/Low hsCRP, n=1,004
Low GlycA/High hsCRP, n=499
High GlycA/Low hsCRP, n=493

Multivariable Cox regression was utilized to determine the association of the high and low categories to major adverse cardiovascular events (MACE).

MACE was defined as the first occurrence of death, follow-up myocardial infarction (MI), follow-up heart failure (HF) hospitalization, and stroke.

Patients were followed for a mean of 7.0±2.8 (median: 7.9) years.

GlycA and hsCRP were moderately correlated: spearman r=0.463, p<0.0001

RESULTS

Baseline levels of both GlycA and hsCRP were found to be independent and additive markers of risk for future MACE, especially death and HF hospitalization.

Further studies are needed to determine the differential pathophysiology of these two markers.

RESULTS FROM THE INTERMOUNTAIN HEART COLLABORATIVE STUDY

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RESULTS

MACE

Death

High GlycA/hS-CRP vs. low hs-CRP

High GlycA/hs-CRP vs. low hs-CRP

High hs-CRP vs. low hs-CRP

p-value

33.5% 41.3% 35.7% 49.1% <0.0001

Death

17.1% 27.1% 22.5% 32.8% <0.0001

High hs-CRP vs. low hs-CRP

16.3% 16.5% 17.4% 18.8% 0.67

HF hospitalization

4.4% 6.4% 6.3% 10.6% <0.0001

Stroke

0.0% 0.4% 5.3% 8.8% 0.60

C O N C L U S I O N S

Baseline levels of both GlycA and hsCRP were found to be independent and additive markers of risk for future MACE, especially death and HF hospitalization.

Further studies are needed to determine the differential pathophysiology of these two markers.

STROKE

MACE

Death

High GlycA/hS-CRP vs. low hs-CRP

High GlycA/hs-CRP vs. low hs-CRP

High hs-CRP vs. low hs-CRP

p-value

33.5% 41.3% 35.7% 49.1% <0.0001

Death

17.1% 27.1% 22.5% 32.8% <0.0001

High hs-CRP vs. low hs-CRP

16.3% 16.5% 17.4% 18.8% 0.67

HF hospitalization

4.4% 6.4% 6.3% 10.6% <0.0001

Stroke

0.0% 0.4% 5.3% 8.8% 0.60

C O N C L U S I O N S

Baseline levels of both GlycA and hsCRP were found to be independent and additive markers of risk for future MACE, especially death and HF hospitalization.

Further studies are needed to determine the differential pathophysiology of these two markers.