GlycA and Not High-sensitive C-Reactive Protein is Associated with Epicardial Fat. The ELSA-Brasil

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BACKGROUND
• Epicardial adipose tissue is a visceral fat depot that can locally affect coronary arteries through secretion of proinflammatory molecules.
• GlycA is a novel proton nuclear magnetic resonance (NMR) spectroscopy-measured biomarker associated with Coronary Heart Disease (CHD).
• GlycA reflects the glycosylation states of acute-phase proteins in serum with lower intra-individual biological variability compared to high-sensitive C-Reactive Protein (CRP) providing a more stable measure of low-grade systemic inflammation

HYPOThESIS
to verify the association of epicardial fat with CRP and GlycA.

METHODS
• We sampled 819 participants from the Brazilian Longitudinal Study of Adult Health underwent a 64-detector CT scanner examination (Brilliance 64, Philips Healthcare, Netherlands).
  Two board certified radiologists selected a cross-sectional tomographic cardiac slice and fat was automatically defined using global thresholding tool in OsiriX software (v.8.5, Bernex-Switzerland), as tissue attenuation ranging (-250 to -50 Hounsfield Units).
  GlycA was obtained by NMR spectroscopy (LabCorp, Morrisville, NC) and CRP was obtained by immunonephelometry.
  We applied generalized linear models to evaluate the association between epicardial fat and each inflammatory marker. We adjusted for age, sex, race, body-mass index, waist circumference, diabetes, and use of statins.

RESULTS
These 819 participants (median age=58 years) were women, 52.5%; White, 58.6%; obese, 26.9%; with diabetes, 28.1% and under use of statins, 21.1%.
  The median epicardial area was 8.5 cm² (IQR=6.6-11.1).
  The β-coefficients (and 95% Confidence Intervals) related to the epicardial area after adjustment for those covariates were for GlycA, β=0.004 (0.001 to 0.008; p-value=0.012) and CRP, β=-0.003 (-0.042 to 0.035; p-value=0.86).
  The association between the epicardial area and GlycA was maintained for men, β=0.005 (p=0.022); for White, β=0.006 (p=0.013), Mixed, β=0.010 (p=0.001), and Asians, β=0.019 (p=0.018);
  people with body-mass index < 30 kg/m², β=0.007 (p=0.005); without diabetes, β=0.006 (p=0.004); and
  not using statins, β=0.005 (p=0.005).

CONCLUSION
• GlycA, but not C-Reactive Protein was associated with epicardial fat.