Cliff Dominy PhD
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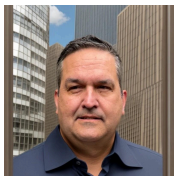


16 May, 2025

Clinical Trial Report

The URRAH study: What does the TG/HDL-C ratio tell us about residual cardiovascular risk?

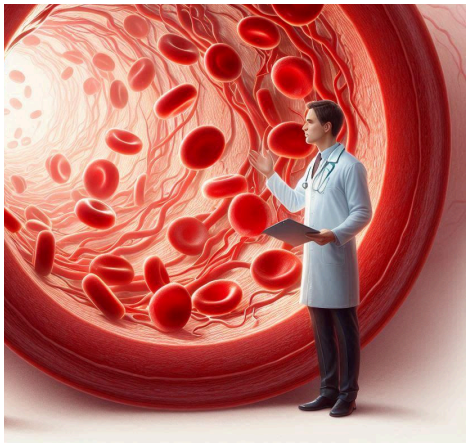
Cardiovascular disease (CVD) is a leading cause of death for those following a modern Western lifestyle. The widespread use of lipid-lowering therapy has reduced, but not eliminated, the mortality risk of the disease.

This stubborn "residual risk" has prompted the American College of Cardiology to lower its LDL cholesterol target, a measure of risk, to 70 mg/dl.

However, for some, this may not be enough. Clinicians need additional tools to identify patients with "normal" cholesterol levels who remain at an increased risk of CVD.

The Uric Acid Right for Heart Health (URRAH) Study was a multi-centred retrospective cohort study published in 2025 [1]. It was designed to identify common clinical markers associated with cardiovascular mortality in patients with moderately elevated LDL cholesterol (130 mg/dl).

URRAH investigators identified 18,694 patient records with at least 10 years of data, which were selected for further analysis. The

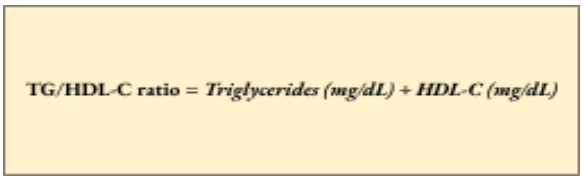


participants were older Italian men and women, including some with diabetes, hypertension, and kidney disease. Their body fat levels, as measured by body mass index, varied widely.

The primary outcome of the study was cardiovascular mortality; secondary outcomes were non-fatal myocardial infarction, heart failure, or stroke.

The URRAH study reported 2665 CVD-related deaths of participants in the period covered by the database. The best predictor of CVD mortality risk in this medium-risk population was the triglyceride to high-density-lipoprotein cholesterol ratio

(TG/HDL-C)- a ratio > 3.8 added an additional 37% CVD mortality risk.

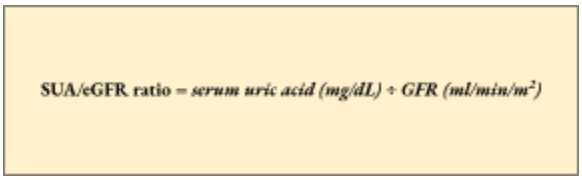


Serum uric acid (SUA) and other lipid and glycemic health markers did not show the same association with cardiac death.

Investigators divided the cohort into quintiles based on TG/HDL-C ratios and examined the data for additional hard clinical outcomes. Once stratified, elevated SUA was moderately associated with mortality. Kidney function, as assessed by the glomerular filtration rate (GFR), was inversely associated with CVD risk.

However, the combined SUA/GFR ratio was the most statistically significant marker of residual CVD risk. Importantly, its association with mortality was independent from, and additive to, the TG/HDL-C risk score.

The researchers found an additional 23% CVD mortality risk between the best and worst TG/HDL-C groups. The healthiest group in the study had a TG/HDL-C ratio of 1 and a SUA/GFR ratio < 0.053. Over a ten year period,they experienced a 5% CVD mortality rate- nearly half that of the least healthiest group.



The URRAH study has given clinicians two additional ratios, TG/HDL-C and SUA/GFR), with which to reassess a medium-risk patient's probability of cardiovascular death.

References

1. Russo, E., Viazzi, F., Pontremoli, R. *et al.* Predictive value of TG/HDL-C and GFR-adjusted uric acid levels on cardiovascular mortality: the URRAH study. *Lipids Health Dis* 24, 21 (2025).

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