Allopurinol hypersensitivity is rare, bad, and partially avoidable, but allopurinol can still be used effectively

In this issue of the *Journal*, Bocchi et al[1] remind us of the propensity of allopurinol to cause severe, life-threatening systemic hypersensitivity reactions and erythroderma. These reactions are fortunately quite rare (a few per thousand patient years), but allopurinol is one of the drugs most commonly associated with Stevens-Johnson syndrome and toxic epidermal necrolysis. Mortality associated with the latter likely remains greater than 20%.

Fear of this adverse effect led to the generation of dosing guidelines in 1984 with the hope of minimizing the occurrence of allopurinol hypersensitivity syndrome (AHS) and severe dermatitis.[2] Those guidelines were based on pharmacokinetic data and have never been clinically validated as necessary or effective. Furthermore, if adhered to, likely fewer than a third of patients will have their serum urate level reduced to the minimal target level (< 6 mg/dL) needed to successfully treat their gout. This is especially true when applying the guidelines in patients with chronic kidney disease (CKD), an extremely frequent comorbidity in patients with gout.[3] Valid concern over the possibility of this severe reaction, and a superficial understanding of the dosing guidelines based on creatinine clearance,[2] have contributed to widespread undertreatment, including allopurinol underdosing, of patients with gout. Additionally, there remains an unsupported fear of renal toxicity from “treat-to-target” allopurinol dosing in patients with CKD.

Hande at al[2] astutely recognized that a large fraction of patients experiencing AHS had “renal insufficiency.” They meticulously described the pharmacokinetics of allopurinol and its active metabolite oxypurinol, which is renally cleared in parallel with creatinine. They calculated the

The mortality rate in TEN ranges from 25% to 35% due to risk of bloodstream infections and renal failure from loss of fluids from the blisters.[2] Aside from suspending the offending drug, treatment of all patients with SJS/TEN includes adequate fluid resuscitation, artificial nutrition (if needed) enriched in protein to help repair skin tissue, pain control, antibiotic therapy in case of sepsis, antithrombotic and gastric ulcer prophylaxis, and the use of nonadherent dressings. Immunomodulatory drugs like cyclosporine have shown some benefit.[6] The combination of plasmapheresis and intravenous immunoglobulins may reduce mortality.[7] Resolution of the disease can take several weeks.[6,7]

Avoiding future exposure to drugs of the same pharmacologic class as the drug that triggered SJS/TEN is suggested because there can be cross-reactivity (eg, antiepileptics with aromatic structures such as phenytoin, carbamazepine, and phenobarbital or beta-lactam antibiotics).[8] ■

CLINICAL NEWS | MRI

Men appear more vulnerable to dynamic carotid plaque

Liz Carey
Jun 3, 2025

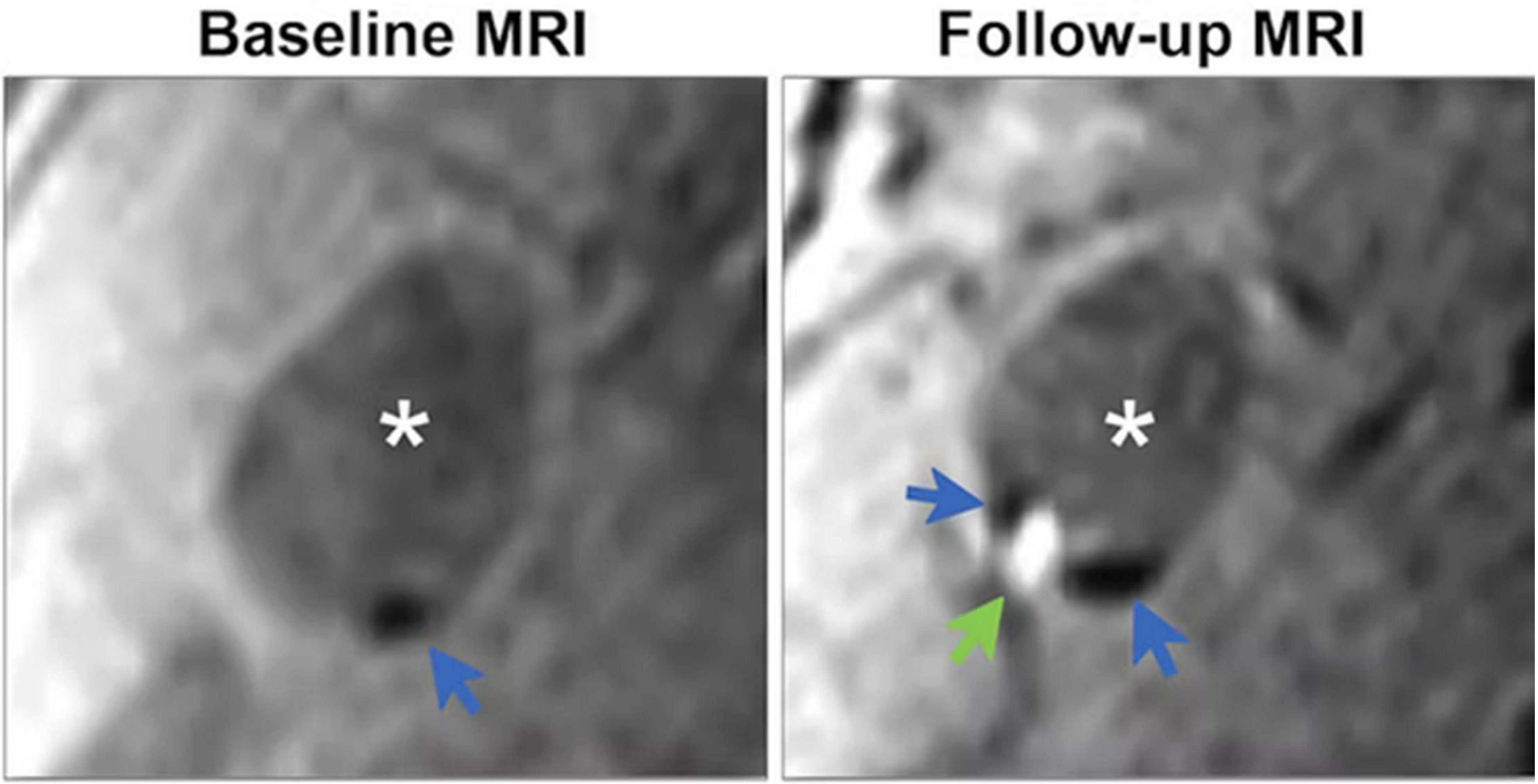
Serial MR scanning shows that different components within carotid atherosclerotic plaque may influence each other and increase risk of intraplaque hemorrhage (IPH), according to neurovascular imaging research published June 3 in *Radiology*.

Researchers led by Daniel Bos, MD, PhD, at Erasmus MC University Medical Center in Rotterdam, the Netherlands found that that compared to plaques without calcification, plaques that already had calcification were twice as likely to develop internal bleeding, a key indicator of plaque vulnerability and potential rupture. And men are more likely to have plaques evolve to multicomponent plaques with IPH, the team also found.

considering volume or morphologic characteristics.

Regardless, "one of the key findings of our work is that calcified plaques may not be as harmless as once thought, since these plaques were found to be at risk of intraplaque bleeding, which in itself is the most important cause of plaque rupture and subsequent stroke," Bos stated for the RSNA. He emphasized the importance of ongoing plaque monitoring and proactive risk factor management.

The group also called for future longitudinal research to confirm whether the morphologic characteristics of calcification are linked to incident IPH.



Demonstration of colocalization of pre-existing calcification and incident intraplaque

Annals of Internal Medicine®

Original Research | 17 September 2024

Viral Load–Based Prediction of Hepatocellular Carcinoma Risk in Noncirrhotic Patients With Chronic Hepatitis B: A Multinational Study for the Development and External Validation of a New

Limitation:

Validation in cohorts of other races and receiving antiviral treatment was lacking.

Conclusion:

Our new prognostic model, based on the nonlinear association between HBV viral loads and HCC risk, provides a valuable tool for predicting and stratifying HCC risk in noncirrhotic patients with CHB who are not currently indicated for antiviral treatment.

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BMC Cardiovascul

RESEARCH Op

Association of sdLDL-C/LDL-C ratio with atherosclerotic cardiovascular disease: a case-control study

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Kun Liu[1], Xin Fang[1], Xingguang Zhang[1*] and Nan Zhang[1*]

Abstract

Background Low-density lipoprotein cholesterol (LDL-C) and small dense low-density lipoprotein cholesterol (sdLDL-C) are key drivers of atherosclerotic cardiovascular disease (ASCVD) risk. This study aims to investigate the correlation between sdLDL-C/LDL-C ratio and ASCVD to provide new ideas for accurate prediction of ASCVD and identifying high-risk groups.

Methods The data were derived from patients who visited the Affiliated Hospital of Inner Mongolia Medical University from January 2019 to July 2023. The relationship between the sdLDL-C/LDL-C ratio and the odds of ASCVD was analyzed using univariate and multivariate logistic regression analysis. Subgroup analysis investigates the potential effects of age, sex, hypertension disease heterogeneity, and the relationship between ASCVD.

Results The study included 8924 subjects with an average age of (59 ± 11) years. Multivariate logistic regression analysis revealed that compared to the lowest quartile of sdLDL-C/LDL-C ratio, the odds of ASCVD increased by 1.39, 3.48, and 9.34 times in quartile groups 2, 3, and 4, respectively (*OR* values: 2.39 [95% *CI* 1.91–2.99], 4.48[95% *CI* 3.59–5.60], 10.34 [95% *CI* 8.08–13.22]; $P < 0.001$). This increasing trend was also observed in stratified analyses by age, hypertension and sex.

Conclusions An elevated sdLDL-C/LDL-C ratio is associated with an increased odds of ASCVD. The ratio's predictive ability for ASCVD occurrence surpasses that of sdLDL-C alone.

Keywords sdLDL-C/LDL-C, Atherosclerotic cardiovascular disease

Conclusion

In this study, we found that sdLDL-C/LDL-C was significantly associated with increased odds of ASCVD, especially in men < 55 years of age and those with hypertension. The correlation between sdLDL-C/LDL-C ratio and ASCVD occurrence surpasses that of sdLDL-C alone, suggesting its potential as an effective predictor for ASCVD development.

2025 ASCO ANNUAL MEETING

ctDNA Testing in CRC Management: Is It Ready for Prime Time?

Key Points:

- An Education Session at the 2025 ASCO Annual Meeting will explore the role of circulating tumor DNA (ctDNA) testing in the management of colorectal cancer (CRC).
- Emerging evidence suggests that liquid biopsy using ctDNA testing has the potential to guide treatment of CRC in the early-stage and metastatic settings.
- Although many questions remain about the role of ctDNA testing, recent and ongoing trials should help elucidate its role in clinical practice.

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