

# Sports-Statin Interaction: Ensuring Safe and Smart Synergy

SANJAY KALRA\*, SUNEET VERMA†, KAMAL KISHOR‡

## ABSTRACT

Both sports (physical activity) and statins are recommended for the prevention and management of atherosclerotic cardiovascular disease. The synergy that they create in risk reduction, however, may turn dysfunctional at times. Statin usage is associated with a risk of muscle-related conditions including myalgia, myositis and rhabdomyolysis. This risk is exacerbated by unaccustomed physical activity, exercise or sports. The communication shares practical and pragmatic suggestions regarding the prevention and management of the potential sports-statin interactions that may occur. It also highlights the need to consider drug-lifestyle interactions, apart from conventional drug-drug interactions.

**Keywords:** Atherosclerosis, cardiovascular risk, coenzyme Q, diabetes, physical activity, sports medicine, statins, vitamin D

Physical exercise is the basis of a healthy lifestyle, and is recommended as part of strategies to minimize cardiovascular risk. Statins, too are a part of the comprehensive strategies to prevent and manage atherosclerotic cardiovascular disease (ASCVD). This sports-statin synergy, however, may turn dysfunctional at times.

## SPORTS-STATIN INTERACTIONS

Current guidelines<sup>1-3</sup> mention the need for caution while co-prescribing exercise and statins. Building upon these expert recommendations, we share pragmatic suggestions for health care professionals regarding potential sports-statin interactions.

We discuss how to prevent, identify and manage these interactions in the course of clinical practice. Awareness about these issues will help maximize the benefits of both sports (and physical activity/exercise) as well as statins in persons who need them.

## INDICATIONS

- Sports and statins are essential pillars of cardiovascular disease prevention and treatment.
- Statins should be prescribed, as indicated, in persons with established ASCVD, and those at high risk of ASCVD, to reduce cholesterol and minimize cardiovascular risk.
- Sports, physical activity, dance and exercise (SPADE) should be encouraged in all persons, especially those with high cholesterol and established ASCVD/high cardiovascular risk.
- Health care professionals must be aware that unaccustomed exercise is a risk factor for statin-induced muscle dysfunction.

## STATIN VIGILANCE

- Persons on statins should inform their treating physician while starting or intensifying a structured physical activity/sports/exercise/dance (SPASED) regimen.
- Persons recovering from acute coronary syndromes must follow their treating physician's advice regarding graded and gradual cardiac rehabilitation.
- Persons on statins who develop muscle aches, muscle pains, limited range of movement or high-colored urine should inform their treating physician immediately.
- A serum CPK (creatinine phosphokinase) and urine heme should be ordered if clinically indicated.

\*Dept. of Endocrinology, Bharti Hospital, Karnal, Haryana, India; University Center for Research & Development, Chandigarh University, Mohali, Punjab, India

†Dept. of Medicine, Alchemist Hospital, Panchkula, Haryana, India

‡Dept. of Cardiology, Rama Hospital, Karnal, Haryana, India

**Address for correspondence**

Dr Sanjay Kalra

Dept. of Endocrinology, Bharti Hospital, Karnal, Haryana, India; University Center for Research & Development, Chandigarh University, Mohali, Punjab, India

E-mail: brideknl@gmail.com

### SAFE SEQUENTIAL USAGE

- Optimize their metabolic and nutritional parameters including hemoglobin, electrolytes, calcium, magnesium and vitamin D, prior to initiating SPASED regimens and/or statin therapy.
- Avoid up-titrating statin dose and initiating/intensifying SPASED regimens simultaneously.
- Persons pursuing SPASED should inform their treating physician about their current SPASED regimens when statin therapy is initiated.
- Athletes planning endurance exercise like marathons may consider a 2- to 3-day statin holiday prior to the date of the event.

### MANAGEMENT OF MYOPATHY

- Persons who develop statin-induced myopathy should temporarily discontinue or de-intensify their SPASED workout. Persons with statin-induced myopathy will benefit from rest, hydration and adequate nutrition.
- Vitamin D and coenzyme Q may be used to prevent and alleviate symptoms.
- Persons with statin-induced myopathy should be monitored regularly, till symptoms and biochemical abnormalities resolve.
- Supportive treatment will be required for persons who develop rhabdomyolysis.

### STATIN RECHALLENGE

- Statin rechallenge, with a lower dose or a different statin, should be attempted in persons with a history of statin-induced myopathy, once they have stabilized.

- Pitavastatin, 2 mg or 4 mg daily, may be considered in persons who are unable to tolerate atorvastatin or rosuvastatin.
- Persons who develop myopathy-related symptoms upon rechallenge- may be offered alternative lipid-lowering medication such as ezetimibe, icosapent ethyl or PCSK9 inhibitors.
- Clinical prudence should prevail while deciding whether to offer a statin rechallenge to persons with a history of statin-induced rhabdomyolysis.

### SUMMARY

This brief communication encapsulates and reinforces the concept of sports-statin interaction, and shares ways of mitigating the risk.

All health care and sports professionals should be aware of this information.

### REFERENCES

1. Katsiki N, Mikhailidis DP, Bajraktari G, Miserez AR, Cicero AFG, Bruckert E, et al; International Lipid Expert Panel (ILEP). Statin therapy in athletes and patients performing regular intense exercise—Position paper from the International Lipid Expert Panel (ILEP). *Pharmacol Res.* 2020;155:104719.
2. Raygor V, Khera A. New recommendations and revised concepts in recent guidelines on the management of dyslipidemias to prevent cardiovascular disease: the 2018 ACC/AHA and 2019 ESC/EAS guidelines. *Curr Cardiol Rep.* 2020;22(9):87.
3. Puri R, Mehta V, Duell PB, Wangnoo SK, Rastogi A, Mohan V, et al. Management of diabetic dyslipidemia in Indians: Expert consensus statement from the Lipid Association of India. *J Clin Lipidol.* 2023;17(2):e1-14.

■ ■ ■ ■

### New Study Reveals Cost-effectiveness of Tafenoquine in Treating Vivax Malaria

According to a study published in *PLOS Medicine*, researchers found that tafenoquine, a promising medication for treating vivax malaria, is a cost-effective alternative to the conventional 7-day primaquine treatment, despite the mandatory glucose-6-phosphate dehydrogenase (G6PD) deficiency testing before prescription. Vivax malaria, caused by the *Plasmodium vivax* parasite, is known for its persistent liver-stage infection.

The researchers compared the results of G6PD screening followed by a single dose of tafenoquine against the traditional 7-day low-dose primaquine regimen without G6PD screening. Additionally, merely 62% to 86% of vivax malaria patients complete the full 7-day primaquine treatment, prompting a closer examination of cost-effectiveness in varying completion scenarios. Utilizing an economic evaluation model and a disease transmission model, the researchers explored three primaquine treatment scenarios: patients completing 30%, 67% or 90% of the 7-day course. Remarkably, the results consistently demonstrated that tafenoquine stood out as the most cost-effective treatment across all completion rates compared to primaquine.