



When prescribing Latanoprost, don't forget about potential cardiovascular side effects

The Science behind the Tip

Prostaglandin analogues are advised as first line treatment for chronic open angle glaucoma by the European Glaucoma Society Guidelines for their effectiveness and high safety profile. The latanoprost eye drops information leaflet reports uncommon systemic side effects such as asthma, shortness of breath, headache, dizziness and muscle pain. More recently, a number of reports have described cases of vasospastic angina exacerbation, palpitations, heart block and atypical chest pain from 1 to 2 weeks after initiating topical latanoprost.¹⁻⁴ While a definitive cause-effect association has not been found yet, symptoms' remission on cessation of treatment may support a causal link.

The following pathogenesis have been postulated:

- Systemic absorption of Prostaglandin F2a (such as latanoprost) can induce vasoconstriction in coronary vessels, eliciting angina.
- Prostaglandin F2a can induce ventricular myocyte hypertrophy, which can lead to abnormally increased oxygen demand and causing myocardial ischaemia.
- Prostaglandin F2a has been shown to affect cardiac rate and rhythmicity in both humans and animal models.

References

- 1) Mitra M, Chang B, James T. Exacerbation of angina associated with latanoprost. *BMJ*. 2001 Oct 6; 323(7316): 783.
- 2) De Smit E, Theodorou M, Hildebrand GD, Bloom P. Heart block following topical latanoprost treatment. *BMJ Case Rep*. 2011; 2011: bcr0820114607.
- 3) Rajan MS, Syam P, Liu C. Systemic side effects of topical latanoprost. *Eye*. 2003 volume 17, pages 442–444
- 4) Lipi C. Systemic side effects of topical prostaglandin analogues. *Indian J Ophthalmol*. 2020 Nov; 68(11): 2637–2638.