Sir,

Response to Jones *et al*

We note with interest the paper by Jones *et al* regarding the role of General Practitioners with specialist interests (GPwSI) in reducing the high false-positive rate of referrals for glaucoma.[1] They maintain that the reduced false-positive rate in their study translates into improved efficiency. However, efficiency is characterised by maximum effectiveness with minimum waste of resources. Measurement of efficiency would also require demonstration of a reduced false-negative rate. It would be of interest to know how many of the patients discharged by the GPwSI would also have been discharged by the glaucoma specialist.

Reference

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Sir,

Sildenafil-associated vascular CASUALTIES

In a recent issue of the *Eye*, I read with interest the correspondence regarding sildenafil (Viagra) and nonarteritic anterior ischaemic optic neuropathy (NAION), cilioretinal artery occlusion and central retinal vein occlusion in a haemodialysis patient. Dr Gedik *et al*[1]discuss the causal relationship between drug and its results. I think their correspondence guides the scientists in the adverse effects of drugs. On the other hand, phosphodiesterase (PDE)-5 inhibitors, currently used as on-demand drugs, could be administered as prophylaxis agents either for erectile dysfunction, which is mainly a neurovascular disease, or for some other widespread vascular diseases owing to their beneficial effects on endothelial functions.[2] By the way, I believe it merits mention to share the results of our sildenafil studies with readers.[3–5] In the first study, we performed the cotton thread, Schirmer I tests, and tear break-up time to determine the acute effects of sildenafil on tear functions. The tests were applied to the subjects just before and 1 h after ingesting oral sildenafil 50 mg. The results of these tests were insignificant in comparison with the values of pre- and postmedication of sildenafil.[3] The evaluation of the acute effects on tear functions at the peak drug serum levels was important because erectile dysfunction and abnormal tear functions are generally seen in an older population. Also, we evaluated the long-term effects of the same drug on visual acuity, colour vision, intraocular pressure, electroretinography (amplitude and implicit time of b-wave), blue-on-yellow and white-on-white Humphrey visual field, and tear functions in chronic users who had received one or more times in a week for more than 3 months at least, but not in the last 12 h before the study. We had not detected any abnormalities on the above-mentioned tests in sildenafil users and concluded that repeated exposures of ocular tissues to therapeutic doses of sildenafil were unlikely to impair their functions.[4]

Overall, PDE-5 inhibitors have ameliorating effects on endothelial functions therefore, the cause of NAION can not be explained by detrimental effects on the vascular supply of the optic nerve. It is not possible to say whether sildenafil is directly responsible in these events, as other factors could also have been involved in NAION, cilioretinal artery occlusion, and central retinal vein occlusion. More clinical/experimental multidisciplinary studies are needed to clarify these issues. I think the patients using sildenafil should closely collaborate with the ophthalmologist and appeal to them when any visual symptom is experienced.

References

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Sir,

Reply to 'Sildenafil-associated vascular casualties' by Halit Oguz

We wish to thank Dr Oguz for his correspondence regarding our report of 'Sildenafil-associated consecutive nonarteritic anterior ischaemic optic neuropathy, cilioretinal artery occlusion, and central retinal vein occlusion in a haemodialysis patient'.[1] Dr Oguz suggests that nonarteritic anterior ischaemic optic neuropathy (NA-AION) could not be explained by detrimental effect of sildenafil on the vascular supply of the optic nerve. He also adds that other factors could have been involved in NA-AION, cilioretinal artery occlusion, and central retinal vein occlusion.

The originality of this case presentation[1] is that it is the first report of sildenafil-related NA-AION, cilioretinal artery, and central retinal vein occlusions. After the first attack of NA-AION in the left eye of the patient, which developed by ingestion of 100 mg of sildenafil for the first time the night before, the patient represented with a darkened superior visual field in his right eye for months later. Ignoring warnings against sildenafil, he had taken another 100 mg tablet. We think that the development of NA-AION in both eyes of the patient after ingestion of sildenafil is very important and must be taken into consideration by ophthalmologists and all general practitioners.

Dr Oguz's suggestion, which proposes that other factors could have been involved in NA-AION, cilioretinal artery occlusion, and central retinal vein occlusion, is valid. The pathogenesis of NAION is multifactorial, and includes structural and blood flow abnormalities and insufficient circulation in branches of the short posterior ciliary vessels.[2] A 36-year-old male patient suffering from chronic renal failure which required haemodialysis three times a week was presented in our case report. Most patients on haemodialysis have cardiovascular pathology, with conditions such as atherosclerosis, anaemia, hypotension, and hypertension. Our patient had had episodes of hypotension during the day and night, and also after haemodialysis sessions, and he had a small cup-to-disc ratio. We suspect that the first sildenafil dose reduced arterial pressure significantly (most markedly at 1–2 h after administration), leading to NA-AION, cilioretinal artery occlusion, and central retinal vein occlusion.

Pomeranz and Bhavsar[3] reported seven patients who had typical features of NA-AION within 36 h after ingestion of sildenafil citrate. They suggest that sildenafil may provoke NA-AION in individuals with an atherosclerotic risk profile. We think that patients need to know the potential ocular complications of sildenafil, and history of NA-AION should be a definite contraindication. Any prescription of this drug should require a detailed ophthalmologic examination and risk factor assessment before therapy is initiated especially in patients with an atheriosclerotic risk profile. We agree with Dr Oguz that more clinical/experimental multidisciplinary studies are needed to clarify all ocular effects of sildenafil.

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