LETTERS TO THE JOURNAL

Sir,

Tachycardia and Myocardial Ischaemia Following Subconjunctival Injection of Mydricaine No. 2

A case is reported of severe tachycardia and myocardial ischaemia 5 minutes after subconjunctival injection of Mydricaine No. 2. The patient had fibrinous uveitis 1 week after cataract surgery. No previous adverse effect of this formulation has been reported in the United Kingdom.

Case Report

A 78-year-old woman was admitted to Torbay Hospital for intensive topical treatment of fibrinous uveitis in her right eye and raised intraocular pressure of 24 mmHg. She had had right extracapsular cataract extraction and intraocular lens implant 1 week previously. She had survived three previous myocardial infarctions. Visual acuity the day after surgery had been 6/12 unaided, increasing to 6/9 with pinhole, but it had decreased to counting fingers, increasing to 6/60 with pinhole, on admission.

Three hours after admission she was reviewed on the ward when it was noted that her right pupil had not dilated despite topical cycloplegic medication. A subconjunctival injection of 0.5 ml Mydricaine No. 2 with 4 mg betamethasone was administered under topical anaesthesia with amethocaine 1%. The eye was padded and the patient returned to bed. Five minutes later she complained of severe crushing chest pain and nausea. She appeared pale and dyspnoeic and vomited twice. Her pulse was 160 per minute regular and blood pressure was 80 mmHg systolic and 50 mmHg diastolic. The chest pain was only partially relieved by sublingual glyceryl trinitrate spray. An electrocardiogram performed half an hour after the onset of symptoms showed ST segment elevation in leads II, III and aVF, and ST segment depression in leads I and aVL. A tablet of 300 mg aspirin was given to the patient to chew, who was then transferred to the Coronary Care Unit at Torbay Hospital, where she was given an intravenous infusion of streptokinase. She did not develop any significant reperfusion arrhythmia. Her blood pressure and pulse had returned to normal the next day and her cardiac enzymes assay did not show any significant rise over 2 days. She developed a hypopyon in the right eye but this gradually settled over the course of 1 week with intensive topical treatment. When reviewed in the clinic 2 weeks after admission, her visual acuity had improved to 6/60 unaided, 6/18 with pinhole, in the right eye.

Discussion

Mydricaine No. 2 is a drug formulation containing atropine sulphate 1 mg, adrenaline 0.12 ml of 1:1000, procaine hydrochloride 6 mg, boric acid 5 mg, water for injection to 0.3 ml; it also contains sodium metabisulphite 0.1% and sodium chloride 0.32%. It is commonly given by subconjunctival injection to dilate the pupil when maximal dilatation is required, for example when attempting to prevent permanent formation of posterior synechiae in inflamed eyes. It is not listed in the British National Formulary (BNF), Monthly Index of Medical Specialities (MIMS), ABPI Data Sheet Compendium or in the current Martindale Extra Pharmacopoeia. It is manufactured by Martindale Pharmaceuticals as a product under Special Licence. Therefore there is no information lodged with the drug licensing authorities regarding this formulation.[1] Hospital pharmacies which order this formulation take on the responsibilities of the manufacturer and practitioners who administer it do so on their own responsibility. Liability is not shared with the manufacturer for any adverse effect.[2]

Significant systemic absorption of atropine and adrenaline administered by subconjunctival injection is possible from inflamed periocular tissues, giving rise to cardiovascular changes in susceptible individuals. Atropine given by intravenous injection has given rise to supraventricular tachycardia and myocardial ischaemia in a previously healthy 37-year-old woman without known coronary artery disease.[3] Subconjunctival Mydricaine should be administered with caution, particularly to individuals with inflamed eyes who have angina or have had previous myocardial infarction, as it may give rise to significant cardiovascular change.

J. C. Pandit

Torbay Hospital
Newton Road, Torquay
Devon TQ2 7AA
UK

References

1. Thomson JA. Personal communication, on behalf of Martindale Pharmaceuticals, April 1994.
2. Phillips M, Beaumont I. Unlicensed medicines: notes for prescribers and pharmacists. West Midlands Regional Health Authority, August 1993.
3. Fernandes A, Rato Q, Pinto LS. Taquidisritmia supraventricular complicada por isquemia aguda do miocardio desencadeada pela injeccao de atropina: a proposito de um caso clinico. Rev Port Cardiol 1992;11:1095–9.

