

Complex Cases #1

The role of Fenofibrate



Mrs GP 64 YO Caucasian Female
Presenting complaint: Referred in September 2014 for bilateral cataract
General Health: Controlled hypertension

Past Ocular History: Nil
Family Ocular History: Nil

	Right	Left
Visual acuity	6/9 PH6/6	6/9 PH6/6
Refraction	-3.50/-0.25x70	-5.75/-1.25x110
Pupils	E+A DNC No RAPD	
IOP (Perkins @ 2:07pm)	15mmHg	16mmHg
Slit-lamp examination		
Cornea	Guttata	Guttata
Anterior chamber	clear & quiet	clear & quiet
Lens	NS 2+	NS 2+ L>R
Fundus examination		
Optic Discs C/D ratio	0.3	0.3
Maculae	normal	normal
Posterior pole	Isolated blot haemorrhage superiorly	unremarkable
Peripheral retina	normal	normal

Table 1: Clinical examination

Management Cataract surgery was discussed. An appointment with Mrs GP's general practitioner was recommended to check and optimise cardiovascular risk factors.

1/12 Ophthalmology review: Mrs GP was ready to proceed with cataract surgery. The isolated haemorrhage at the right posterior pole had resolved.

Cataract Surgery
 LE: October 2014
 RE: December 2014

January 2015 4/52 post-operative review
 R: -0.75/-0.25x40 (6/6-)
 L-0.25(6/6)

The right and left IOL was seen to be stable. Moderate Scattered dot/blot haemorrhages were noted in both eyes (R>L). Mrs GP's blood pressure was 149/90. She was referred back to her general

practitioner for testing. A glucose tolerance test revealed a blood sugar level of 19.6mmol/L. Co-management between the GP and an endocrinologist was organised.

March 2015 Mrs GP was diagnosed with Non-Insulin Dependent Diabetes Mellitus (NIDDM). She was commenced on Diabex and Forxiga. Her HBA1c was 8.5. She had moderate non-proliferative diabetic retinopathy (NPDR) in both eyes. There was no evidence of cystoid macula oedema but maculopathy was apparent.

Management Review in three months, consider treatment with Fenofibrate.

Discussion An Australian study (2004-2006) presents evidence that diabetic retinopathy progresses more rapidly after cataract surgery¹. Phacoemulsification has been found to double the rate of diabetic retinopathy in the 12months proceeding surgery¹.

Proposed mechanisms of Fenofibrate in diabetic retinopathy

- ✓ Increases levels of circulating apolipoprotein A-1 which is protective for diabetic retinopathy development.
- ✓ Regulates intra retinal lipid metabolism
- ✓ Reduces lipid deposits and lipid toxicity
- ✓ Anti-inflammatory, anti-angiogenic, anti-oxidant, protects blood retinal barrier breakdown.

In October 2013 Australia was the first country in the world to approve Fenofibrate for this indication.

Key Message: Fenofibrate is effective at slowing the progression of diabetic retinopathy and reducing the need for more invasive treatment in patients with NIDMM, especially those with pre-existing retinopathy. However, it is important to remember it does not replace appropriate control of blood pressure, blood sugar levels and blood lipid levels in reducing the progression of diabetic retinopathy.

¹Ophthalmology. 2009 Aug;116(8):1510-4. doi: 10.1016/j.ophtha.2009.03.003. Epub 2009 Jun 5.