

Management and outcome of sight-threatening diabetic retinopathy in pregnancy

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Abstract

Aims To report the management and outcomes of sight-threatening diabetic retinopathy in pregnancy.

Methods A retrospective review of 8 diabetic females who developed pregnancy related sight-threatening diabetic retinopathy requiring treatment over a 12-year period.

Results In total, 16 eyes of eight patients were included in this series. The mean age of the patients at presentation was 30.75 years \pm 3.8 SD and the mean duration of diabetes was 21.0 years \pm 5.1 SD. The mean follow-up period was 46.75 months \pm 47.2 SD. A total of 87.5% of patients showed progression of diabetic retinopathy during pregnancy, 71% of which were in the sight-threatening proliferative category. In the postpartum period, 81% of patients continued to progress to proliferative diabetic retinopathy, requiring panretinal photocoagulation and multiple other surgical procedures. In all, 69% of eyes retained visual acuity equal to or better than 0.3 logMAR units (6/12).

Conclusion Sight-threatening diabetic retinopathy in pregnancy is a rare disease, but it can have devastating consequences for mother and child. Laser photocoagulation should be considered for pregnant women with severe preproliferative diabetic retinopathy. Proliferative diabetic retinopathy may not regress postpartum. Close followup should be extended in the postpartum period in this group of patients until the retinopathy is stabilised. The presence of combined rhegmatogenous and tractional retinal detachment and neovascular glaucoma were associated with the worst outcome.

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Introduction

Diabetic retinopathy is one of the major causes of preventable blindness in the UK and the USA in those aged between 24 and 64 years.¹ For diabetic women, this may coincide with fertility and childbearing years, and the implications for a blind mother, to take care of and bring up children, are significant. It is well known that diabetic retinopathy may worsen during pregnancy^{2–4} and that its severity may regress in the postpartum period.^{5,6} However, the exact mechanism responsible for progression of diabetic retinopathy during pregnancy is still not entirely clear. Factors thought to be of significance include poor metabolic control,⁷ long duration of diabetes,^{8,9} severity of retinopathy at baseline,¹⁰ rapid normalisation of glycaemic control,^{11,12} hypertension,^{4,13} and changes in retinal blood flow.¹⁴ A study by Phelps *et al*⁷ and the Diabetes in Early Pregnancy Study (DIEP)¹⁰ found that patients in whom retinopathy was most likely to progress had both the poorest control at baseline and the largest improvement during early pregnancy. DIEP also found that duration of diabetes of more than 15 years, and severity of existing retinopathy were most important factors in the development of and progression to severe retinopathy in pregnancy. Rosenn *et al*¹³ found that patients with chronic hypertension or pregnancy-induced hypertension or both had a higher rate of progression of retinopathy. Increased retinal blood flow, as a consequence of hyperdynamic circulatory state in pregnancy, may induce endothelial damage at the capillary level, which may be the responsible factor.¹⁴ The aims of this case series were two-fold. Firstly, we report the characteristics of eight patients whose diabetic retinopathy worsened during pregnancy and whose retinopathy did not regress postpartum. Secondly, we report on the management and outcome of these difficult cases.

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