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OPHTHALMOLOGIC CARE IN THE ADULT PATIENT

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The major diseases in ophthalmology—diabetic retinopathy, cataracts, glaucoma, and age-related macular degeneration—are all diseases of aging. The elderly sector of the population is growing both in the United States and abroad, and these diseases are being seen more frequently by the practicing clinician. The growing obesity epidemic is compounding this by increasing the diabetic population as well. Here are practical points to guide practicing clinician in the understanding and care of the adult patient.

Diabetes

1. Out of the U.S. population, 29.1 million (9.3%) are diabetic, and 8.1 million (27.8%) are undiagnosed.[1]
2. In the period from 2005 to 2008, 4.2 million (28.5%) of U.S. diabetic adults age 40 and over had diabetic retinopathy, and 655,000 (4.4%) had advanced retinopathy.[1]
3. Diabetic eye disease is divided into nonproliferative diabetic retinopathy (NPDR), AKA background retinopathy (BDR), and proliferative diabetic retinopathy (PDR).

	Number with diabetes (millions)	Percentage with diabetes (unadjusted)
Total		
20 years or older	28.9	12.3
By age		
20-44	4.3	4.1
45-64	13.4	16.2
65 years or older	11.2	25.9
By sex		
Men	15.5	13.6
Women	13.4	11.2
Source: 2009-2012 National Health and Nutrition Examination Survey estimates applied to 2012 U.S. Census data.		

Table 1. Diagnosed and undiagnosed diabetes among people aged 20 years or older, United States, 2012.

4. Nonproliferative diabetic retinopathy is graded as mild, moderate, or severe by specific retinal criteria and includes dot-blot hemorrhages, cotton wool spots, venous beading or abnormalities, and exudate. Edema (with or without exudate) in the macula is known as diabetic macular edema and needs to be treated if it becomes "clinically significant macular edema" (CSME) by specific evidence-based criteria. CSME is a major cause of preventable diabetic blindness.
5. Proliferative diabetic retinopathy (PDR) can be divided into vessels proliferating on the optic nerve, called neovascularization of the disc (NVD), or neovascularization elsewhere (NVE), and it is graded as low-risk or high-risk PDR depending on lesion size and associated hemorrhage. Proliferation is fibrovascular in nature and grows into the vitreous as a scaffold, or across the retina, causing tractional retinal detachments and vitreous hemorrhage.
6. Vasculopathic patients, such as those with diabetes, may be at higher risk for postoperative complications. Diabetics with intraoperative or postoperative corneal exposure or erosions may have trouble healing due to a neurotrophic cornea. Diabetes can cause trigeminal nerve disease and loss of corneal sensation, which in turn decreases the stimulation needed to repair injured epithelium, a feature of diabetic epitheliopathy. This can be prevented by the application of a lubricating eye ointment intraoperatively and postoperatively until the patient is awake and alert enough to keep their eyes closed and avoid corneal exposure.
7. Patients with vasculopathic risk factors such as advanced age, diabetes, hypertension, hypercholesterolemia, and smoking are at a higher risk for nonarteritic anterior ischemic optic neuropathy (NAION). Anterior ischemic optic neuropathy causes a watershed loss of perfusion to the optic nerve (infarction to the nerve head) and may lead to severe vision loss. Patients with a crowded optic nerve anatomy, with a small cup-to-disc ratio, are known as having the "disc at risk" for NAION. The risk for such an event may be exacerbated by intra- or postoperative anemia or hypotension and can occur bilaterally.

References and further reading

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