ABSTRACTS

EDITED BY THOMAS J. LIESEGANG, MD

• **Effect of timolol, latanoprost, and dorzolamide on circadian IOP in glaucoma or ocular hypertension.** Orzalesi N,* Rossetti L, Invernizzi T, Bottoli A, Autelitano A. Inv Ophthalmol Vis Sci 2000;41:2566–2573.

THE AUTHORS COMPARED THE AROUND-THE-CLOCK INtraocular pressure (IOP) reduction induced by timolol 0.5%, latanoprost 0.005%, and dorzolamide in patients with primary open-angle glaucoma (POAG) or ocular hypertension (OHT). In this crossover trial, 20 patients with POAG ($n = 10$) or OHT ($n = 10$) were treated with timolol, latanoprost, and dorzolamide for 1 month. The treatment sequence was randomized. All patients underwent measurements for four 24-hour tonometric curves: at baseline and after each one-month period of treatment. The patients were admitted to the hospital, and IOP was measured by two well-trained evaluators masked to treatment assignment. Measurements were taken at 3, 6, and 9 AM and noon and at 3, 6, and 9 PM and midnight by handheld electronic tonometer (TonoPen XL) with the patient supine and sitting, and a Goldmann applanation tonometer with the patient sitting at the slit lamp. Systemic blood pressure was recorded at the same times. The between-group differences were tested for significance by means of parametric analysis of variance. The circadian IOP curve of a small group of untreated healthy young subjects was also recorded using the same procedures. When Goldmann sitting values were considered, all the drugs significantly reduced IOP in comparison with baseline at all times, except for timolol at 3 AM. Latanoprost was more effective in lowering IOP than timolol at 3, 6, and 9 AM, noon, 9 PM, and midnight and was more effective than dorzolamide at 9 AM, noon, and 3 and 6 PM. Timolol was more effective than dorzolamide at 3 PM, whereas dorzolamide performed better than timolol at midnight and 3 AM. An ancillary finding of this study was that in the group of healthy subjects, the pattern of IOP curve was different than in patients with eye disease. The authors conclude that latanoprost leads to a fairly uniform circadian reduction in IOP, whereas timolol seemed to be less effective during the nighttime hours. Dorzolamide was less effective than latanoprost but led to a significant reduction in nocturnal IOP. The reason for the difference in the pattern of the IOP curve of healthy subjects is currently unknown.—Thomas J. Liesegang

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• **A neural basis for general intelligence.** Duncan J,* Seltz RJ, Kolodny J, Bor D, Herzog H, Ahmed A, Newell FN, Emslie H. Science 2000;289:457–460.

THE SPEARMAN HYPOTHESIS IS THAT A GENERAL FACTOR of intelligence (g) represents what is general or common to all the abilities that constitute the intelligence quotient (IQ). The Thomson hypothesis is that g as a collection of multitudinous and diverse skills needed to complete most intellectual tasks. The authors of this article used positron emission tomography (PET) to monitor brain activation in volunteers performing different spatial, verbal and perceptuomotor tasks. They then asked which hypothesis, Spearman's or Thomson's, was best supported by their PET scan data. The authors report that the performance of tasks that are good measures of g results in activation of portions of the brain's frontal lobes. They interpret their results as supporting thg Spearman hypothesis, since the frontal area of the brain, rather than many areas, is primarily activated during performance of different g-based tasks. The authors propose that the neural circuitry of the frontal lobes is the basis of intelligence, although no more than a correlational relationship was shown. The functional significance of these findings is unknown.—Hans E. Grossniklaus

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• **Neurovisual rehabilitation: recent developments and future directions.** Kerkhoff G.* J Neurol Neurosurg Psychiatry 2000;68:691–706.

CENTRAL VISUAL AND OCULAR MOTOR DISORDERS ARE present in 20%–50% of patients in neurological rehabilitation centers. These disorders are associated with an adverse prognosis in outcome studies and impair the success of vocational rehabilitation. Whereas the systematic treatment of language, speech, and motor disorders is traditionally viewed as unequivocally necessary, the possible influence of visual-sensory and ocular motor disorders on the patient's outcome is neglected in neurorehabilita-

0002-9394/00/$20.00