

Natural History of Williams' Syndrome: Physical Characteristics

Williams' syndrome is a relatively common, sporadic condition marked by short stature, developmental disability, a characteristic craniofacial appearance, characteristic behavior, frequent failure to thrive in the newborn period, typical cardiac lesion (supra-valvular aortic stenosis), and, occasionally, hypercalcemia. Most pediatricians feel that they can recognize the syndrome because of the typical elfin facies. Before this excellent study was conducted, however, the natural history of Williams' syndrome through adulthood, its medical complications, and its progressive nature had not been defined. Morris and colleagues collected information from multiple sources in Utah and Kentucky and from the Williams' Syndrome National Association. Evaluations varied from extensive, on an outpatient basis over a 2-day period, to a format of questionnaires answered by the subjects' parents. A total of 109 subjects were included in the study.

The intelligence of the study subjects varied widely, from severe mental retardation to normal (IQ range, 20 to 106), but most subjects had relative verbal and expressive strengths. Auditory input was much better than visual

and motor integration. Distractibility and attention deficits were common, occurring in 84% of subjects. Other frequent problems were esotropia (50%) and hyperopia. Eighty-five percent exhibited a unique hypersensitivity (hyper-exaggerated startle) to sudden, loud sounds.

Most individuals had hoarse voices, irrespective of documented hypercalcemia. Most had small, widely-spaced teeth with malocclusions and hypoplastic enamel.

Seventy-nine percent of all subjects had cardiac murmurs, but only 18% required cardiac surgery. Enuresis and constipation were frequent. Joint contractures were progressive. Initial joint laxity was followed by progressive limi-

tation. Toe-walking, stiff and awkward gait, and lordosis occurred regularly; sequelae related to hypercalcemia, such as renal, intracranial, and abdominal aortic calcifications, also occurred regularly.

Most adults with Williams' syndrome were not able to live independently and had multiple chronic medical problems.

Morris CA, Demsey SA, Leonard CO, et al. *J Pediatr* 1988;113: 318-326.

Editor's comment—*This is an extremely important paper—essential for any physician caring for an individual with Williams' syndrome.*

Judith G. Hall, M.D.

Malformation due to Presumed Spontaneous Mutations in Newborn Infants

An estimate of the frequency of new mutations and the mutation rate among congenital anomalies has been made through an ongoing study of newborns. Congenital anomalies among live-born and stillborn infants of at least 20 weeks' gestation were tabulated over a 10-year period at one institution. Of 69,277 infants, 1,549 (2.24%) had some type of congenital anomaly. Anomalies suggestive of single-gene disorders were found in 48 of 69,277 infants

(0.07%). Family studies suggested that 11 of these 48 single-gene disorders represented new mutations: 10 were autosomal dominant and one was X-linked. The reported mutation rate, 11 of 69,277 (0.00016), was lower than rates quoted in similar studies. There were no differences in the ages of the female or male parents of the infants with mutations when compared with controls. The spontaneous rate for achondroplasia was 1.4/100,000

continued on page 14