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# 50 Years Ago in The Journal of Pediatrics: Growth in Patients with Gonadal Dysgenesis Receiving Fluoxymesterone

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Short stature, the most common feature in Turner syndrome, is caused by haploinsufficiency of the SHOX gene located on the distal short arm of the X chromosome. In this retrospective study, the authors describe a cohort of 26 females, mean age 13.3 years, with gonadal dysgenesis (sex chromosomes consistent with Turner syndrome) who received fluoxymesterone, a non-aromatizable androgen, for 7-32 months. This group demonstrated a significant increase in growth rate and adult height in comparison with 21 patients receiving estrogen. Interestingly, at the time growth hormone was not believed to be effective at increasing height in girls with Turner syndrome.

Fifty years later, what is different? Growth hormone is now the mainstay of treatment for short stature, with early initiation around 4-6 years of age allowing for an increased adult height into the lower normal range for adult women.(1) Oxandrolone, another non-aromatizable androgen, has fewer virilizing side effects than fluoxymesterone(2) and is currently used as adjunctive therapy with growth hormone for increasing adult height, particularly in cases of delayed diagnosis with severe short stature.(3)

It is important to realize that quality of life In adults with Turner syndrome is unaffected by previous growth hormone treatment, but hearing impairment and delayed pubertal induction after age 15 are associated with lower quality of life scores.(4) Promoting early growth permits starting estrogen treatment at a similar age to peers. Therefore, although attention to growth is important, it is essential to consider other aspects of care for these girls.

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