

Aromatase inhibitors plus growth hormone may help short adolescent boys grow taller

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Aromatase inhibitors, when used for up to three years in combination with growth hormone, may effectively and safely help very short adolescent boys grow taller, new research suggests. The study results will be presented Sunday, April 3, at ENDO 2016, the annual meeting of the Endocrine Society in Boston.

"Treating the growth-retarded child in puberty presents significant challenges not easily overcome by the use of [growth hormone](#) (GH) alone, as the presence of sex steroids significantly limits the time available for linear growth in that period," said lead author Nelly Mauras, MD, chief of the Division of Endocrinology, Diabetes and Metabolism at Nemours Children's Health System in Jacksonville, Florida. "This work provides the longest treatment and follow up reported using [aromatase inhibitors](#) (AIs) in adolescent males, showing an excellent safety profile. AIs may prolong the growth life of these children, allowing for taller height, without slowing down their progression through puberty."

During puberty, children grow rapidly and complete their linear growth at an average of around 14 1/2 years for girls and around 16 1/2 years for [boys](#). Estrogen is mainly responsible for the fusion of growth plates in puberty (even in males, because some testosterone, the principal male hormone, is converted to estrogen). Aromatase inhibitors block the conversion of testosterone to estrogen.

Dr. Mauras and her colleagues compared the efficacy and safety of GH

with AIs, alone and in combination (GH/AI), in 76 [adolescent boys](#). The boys were, on average, 14.1 years of age and had idiopathic short stature (ISS), significant short stature without identifiable hormonal or other pathology. The groups were well-matched for height, [body mass index](#), midparental height and bone age.

The researchers obtain the boys' body measurements, left-hand X-rays for bone ages, bone densitometry, lateral spine X-rays and blood samples at baseline. They randomly assigned 25 boys to receive injections of growth hormone (GH) alone, 25 to receive an oral AI (anastrozole or letrozole), and 26 to receive both, for 24 months. Those with residual height potential who wished to prolong their treatment were able to continue through 36 months.

At 24 months, the boys on combination GH/AI gained more height and had greater change in predicted adult height than those on GH or AIs alone, and those on GH/AI also accrued more lean body mass than the other groups.

The treatments were safe, with measures of bone health and adverse events comparable in all groups, and the patients continue to be monitored until they reach near-adult [height](#).

Provided by The Endocrine Society

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