Effect of growth hormone treatment on glucose tolerance in young adults with Prader-Willi syndrome

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Conclusion
GH treatment has no adverse effects on glucose homeostasis in young adults with PWS

Background
Adults with Prader-Willi syndrome (PWS) are predisposed to develop impaired glucose tolerance (IGT) and diabetes mellitus type 2 (T2DM). Reports on the prevalence of T2DM vary from 2-24% in adults with PWS.

In children with PWS, growth hormone (GH) improves body composition, psychomotor development, cognition, adaptive functioning and linear growth without adverse effects on glucose parameters. Randomized, controlled studies have shown that GH is beneficial for adults with PWS1,2, but GH is also known to induce insulin resistance, which might increase the risk for T2DM

Aim
To evaluate the effects of GH on glucose homeostasis in previously GH-treated young adults with PWS who had attained adult height

Participants & Method
Prospective open-label study in 42 young adults with PWS during 2 years of GH treatment (0.33 mg/m2/d ≈ 0.012 mg/kg/d) after attainment of adult height.

An OGTT was performed yearly.

- GH treatment did not affect glucose-stimulated glucose and insulin levels.
- None of the patients developed T2DM during 2 years GH treatment.

2. Sode-Carlsen et al. One year of growth hormone treatment in adults with Prader-Willi syndrome improves body composition: results from a randomized, placebo-controlled study. JCEM 2010