

## **Conditional cardiovascular response to GH therapy in adult patients with Prader-Willi syndrome**

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Context: in Prader-Willi syndrome (PWS), an altered GH secretion has been related to reduced cardiac mass and systolic function when compared with controls.

Objectives: the objective of the study was to evaluate the cardiovascular response to GH therapy in adult PWS patients.

Study Participants: thirteen obese PWS adults (seven males and six females, aged  $26.9 \pm 1.2$  yr, body mass index  $46.3 \pm 1.6$  kg/m<sup>2</sup>) participated in the study.

Methods: determination of IGF-I, metabolic parameters, echocardiography, and cardioscintigraphy with dobutamine stimulation was made during 12 months GH therapy, with results analyzed by repeated-measures ANOVA.

Results: GH therapy increased IGF-I ( $P < 0.0001$ ); decreased C-reactive protein levels ( $P < 0.05$ ); and improved lean mass ( $P < 0.001$ ), fat mass ( $P < 0.05$ ), and visceral fat ( $P < 0.001$ ). Echocardiography showed that 6- and 12-month GH therapy increased left ventricle mass in 76 and in 61% of patients, respectively ( $P < 0.05$ ), did not change diastolic function, and slightly decreased the left ventricle ejection fraction (LVEF) ( $P = 0.054$ ). Cardioscintigraphy documented stable values of LVEF throughout the study, whereas right ventricle ejection fraction decreased significantly ( $P < 0.05$ ) being normally responsive to dobutamine infusion. A positive association between IGF-I z-scores and LVEF occurred at the 6- and 12-month follow-up ( $P < 0.05$ ).

Conclusions: in PWS, GH therapy increased cardiac mass devoid of diastolic consequences. The observation of a slight deterioration of right heart function as well as the association between IGF-I and left ventricular function during GH therapy suggest the need for appropriate cardiac and hormonal monitoring in the therapeutic strategy for Prader-Willi syndrome.

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