

# Comparison of densitometric aspects during the transition period in patients with congenital and acquired pituitary deficiency: first argentine experience



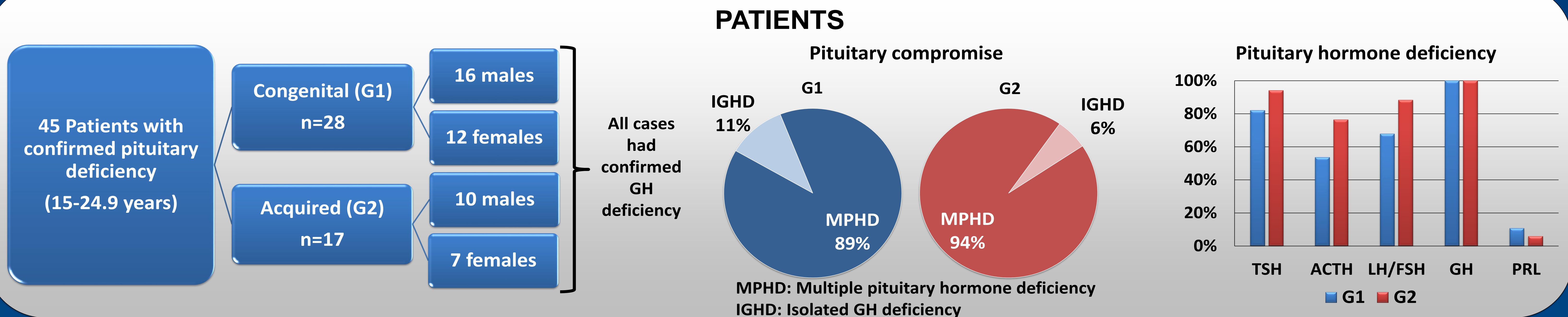
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All authors have nothing to disclose

## BACKGROUND

- The transition phase is the period from the end of puberty until achievement of full adult maturity. During this stage, a series of changes occur: acquisition of adult body composition and height, of peak bone mass, attainment of potential fertility and of adult psychosocial characteristics.
- This phase requires a careful coordinated approach for many chronic disorders and this is particularly important in growth hormone deficiency (GHD).
- Traditionally, children with GHD discontinue GH therapy after attaining final height. Therefore, after childhood treatment it is advisable to analyze GH status and associated comorbidities, in order to assess appropriateness of maintaining GH replacement

## OBJECTIVE

To evaluate densitometric characteristics in patients with pituitary insufficiency after the end of GH therapy for growth promotion and to compare possible differences between individuals with congenital and acquired pathology.



## METHODS

- Body composition and bone mineral density (BMD) of the left femoral neck (FN) and lumbar spine L1-L4 (LS) were assessed by densitometry (DEXA, LUNAR® equipment).
- IGF1 (QLIA IMMULITE®, Siemens)
- Student's t test (IGF1 and BMD); Mann-Whitney test (GH treatment, Final Height, lean mass and fat mass).
- Results expressed as median and range.

## RESULTS

GH Treatment	G1	G2
Onset	7.75 yr (0.5 – 16.1)*	12.85 yr (4 – 18)
Duration	8.25 yr (2.9 – 19.5)**	4.75 yr (1.9 – 12.4)
Regular treatment	53.5 %	82.3 %

\*p= 0.0015 vs G2      \*\* p= 0.0106 vs G2

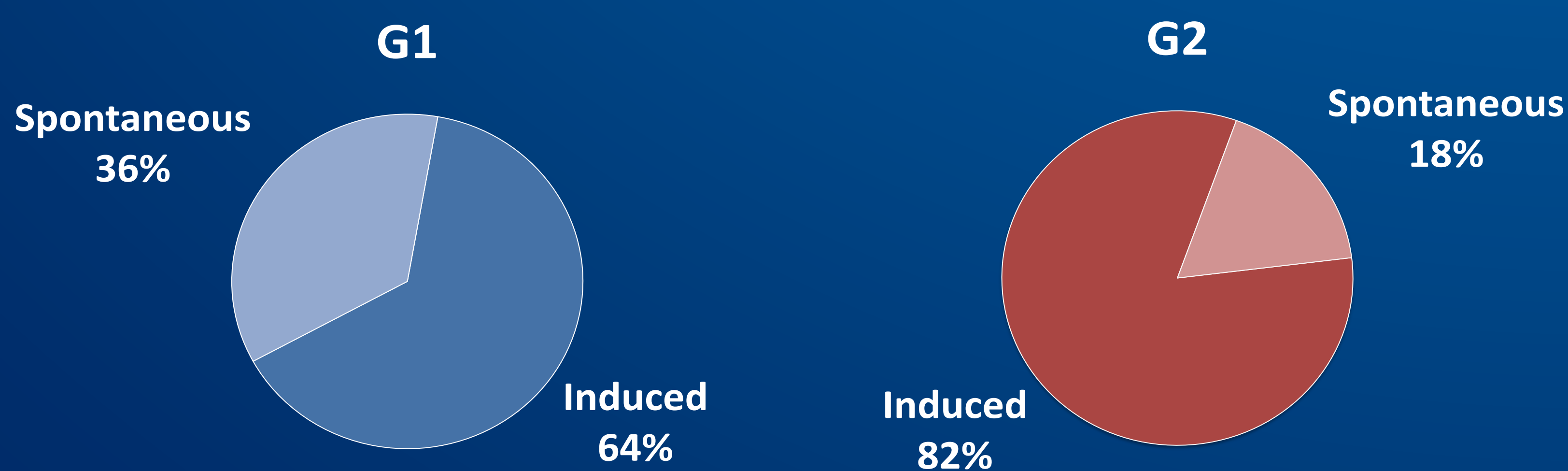
Final Height (cm)	G1	G2
Females	148 (138.5 – 167.3) <sup>+</sup>	158 (143 – 164)
Males	164.3 (152.2 – 176.5) <sup>+</sup>	168.25 (154.2 – 176)

<sup>+</sup> p= NS

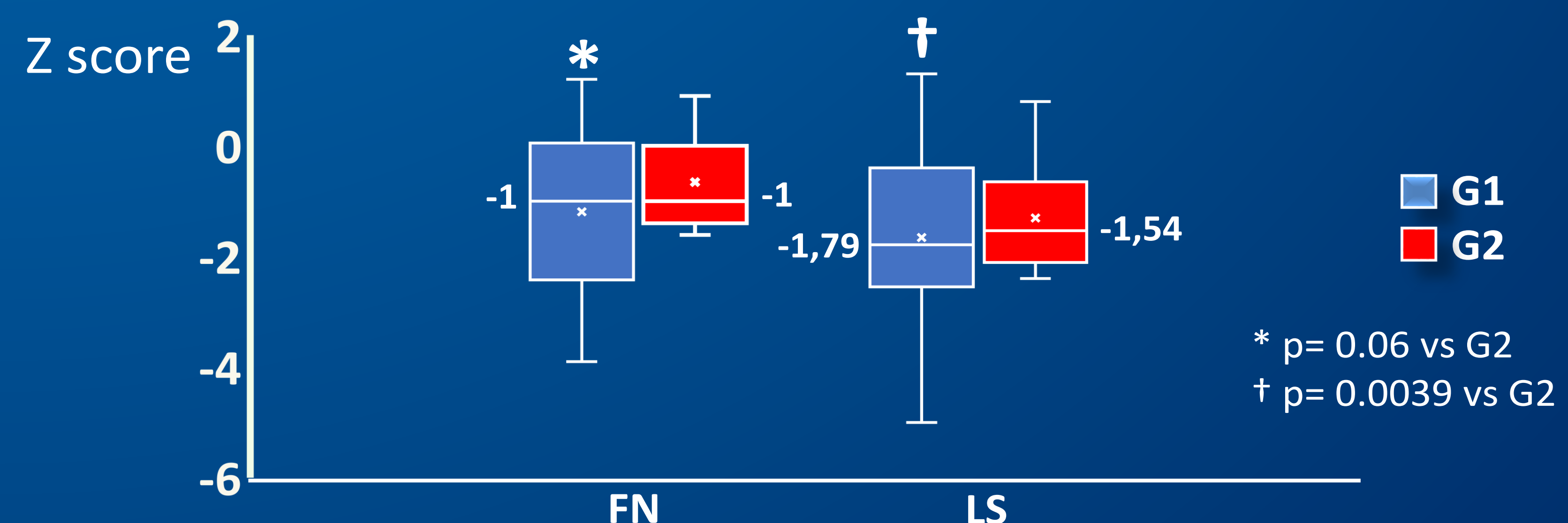
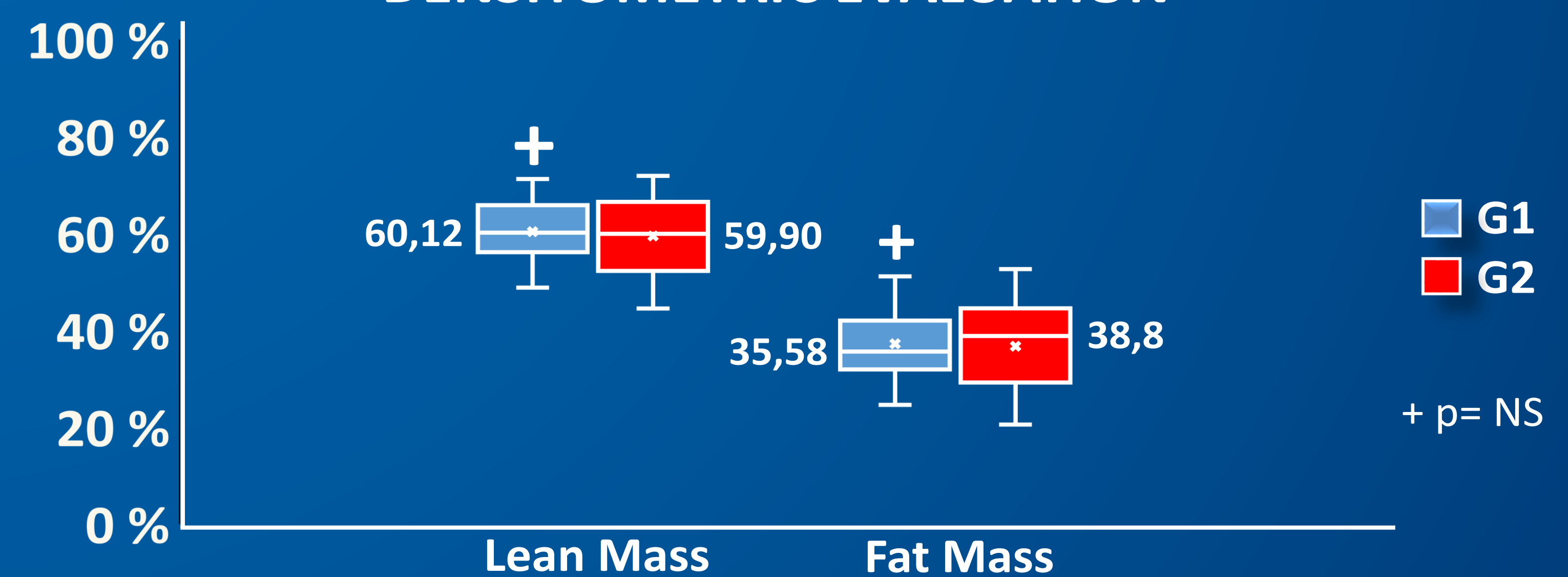
	G1	G2
IGF1 (SDS)	-3.7* (-10 to -1.9)	-3.5 (-16 to 1.4)

\*p= 0.019 vs G2

## PUBERTY



## DENSITOMETRIC EVALUATION



As 11/28 patients from G1 and 4/17 from G2 had near final height under the 3rd percentile, a sub-analysis of BMD was performed in patients with normal height and no significant differences were found in FN and LS.

## CONCLUSION

- The lower BMD of G1 might be related to different factors including, but not limited to, duration of the deficiency, severity (lower IGF1 values) and/or lower final height.
- It is interesting to highlight that differences in BMD did not persist when excluding patients with low height. It is known that areal BMD may be underestimated in subjects with a small skeleton; therefore, in these cases, volumetric BMD measurement should be ideally performed.
- Our findings would suggest the need for GH therapy optimization during childhood, not only to improve final height, but also to achieve better bone quality.