

Quantitative ultrasound evaluation in a cohort of 43 young adults with classical CAH due to 21-hydroxylase deficiency (21OHD): is bone mineral quality impaired?

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Background: few and conflicting data have been reported on bone mineral quality (BMQ) evaluated by quantitative ultrasound (QUS) in young adults patients (pts) with CAH due to 21OHD

Objective and hypotheses: to evaluate the bone mineral quality (BMQ) by QUS variables assessed at proximal phalanges of the hand in a cohort of young adults with classical CAH due to 21OHD and the possible associations with their clinical and metabolic features.

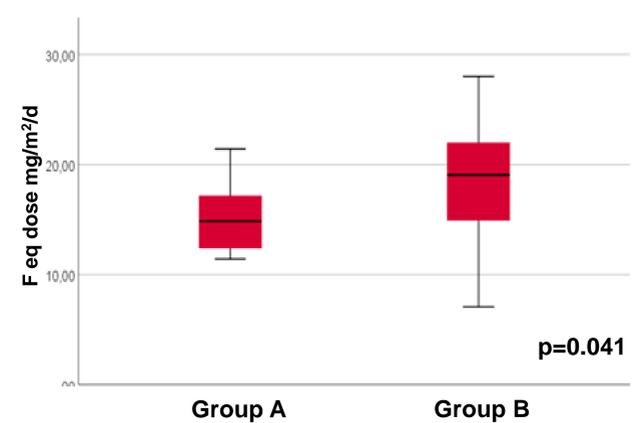
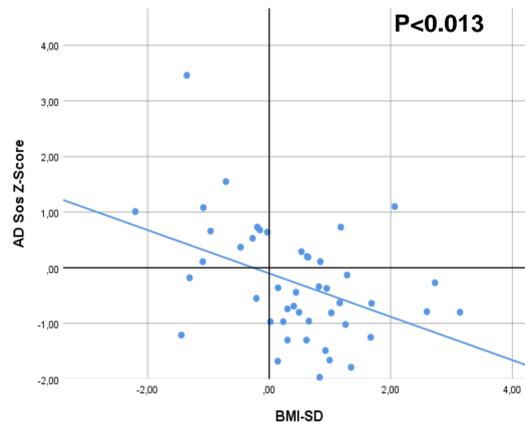
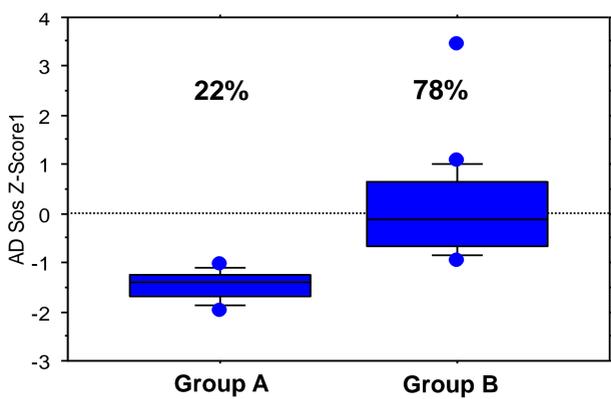
Patients:

43 young adult 21 OHD-CAH pts (21 F and 22 M; 30 salt wasting and 10 simple virilizing forms), diagnosed and treated at our Pediatric Endocrinology Unit in the last 40 years.

Methods: at a mean age of 21.0 ± 5.0 years we retrospectively evaluated in all cases :

1. Amplitude Dependent Speed of Sound - AD-SoS z score
2. Bone Transmission Time – BTT z scores
3. Auxologic features (height SD, BMI SD)
4. mean glucocorticoid + mineralocorticoid (GC+MC) equivalent dose of last 3 years
5. metabolic control (the patients were classified as in good, scarce and excessive control by means of 17 OH progesterone and Androstenedione levels at last evaluation)

Results: patients were subdivided in 2 groups : **Group A** with reduced BMQ (10/43 pts; mean AD SoS z score -1.47 ± 0.3) and **Group B** with normal BMQ (33/43 pts; mean AD SoS z score z-score $:0.0 \pm 0.9$)



1. The large majority of pts showed normal Ad SoS z score,
2. no pt showed AD SoS z score < -2.5 SD
3. BMI SDS has a negative correlation with AD SoS z score
4. Group A pts received less glucocorticoids than pts of Group B

Not significant differences for the other evaluated variables among group A and B pts

	Age (yrs)	Height SDS	BMI SDS	BTT z score	Good control	Scarce control	Excessive control
Group A (10 pt)	19.1 ± 2.3	-1.2 ± 2.6	0.66 ± 0.9	-1.44 ± 0.9	67%	22%	11%
Group B (33 pt)	21.8 ± 5.7	-1.1 ± 1.0	0.45 ± 1.1	-0.9 ± 1.0	45%	41%	14%

Conclusion:

BMQ evaluated by QUS did not result severely impaired in our group of patients. Prospective studies are needed to confirm the possible correlation between QUS variables, long term metabolic control and BMI SD in young adults with classical CAH due to 21 OHD