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## Background

Anti-tumour necrosis factor(TNF) can improve disease and linear growth in children with CD but its effect on bone and muscle development is unclear.

## Methods

Prospective longitudinal study of bone and muscle development in 19 CD(12M) commencing treatment with anti-TNF.

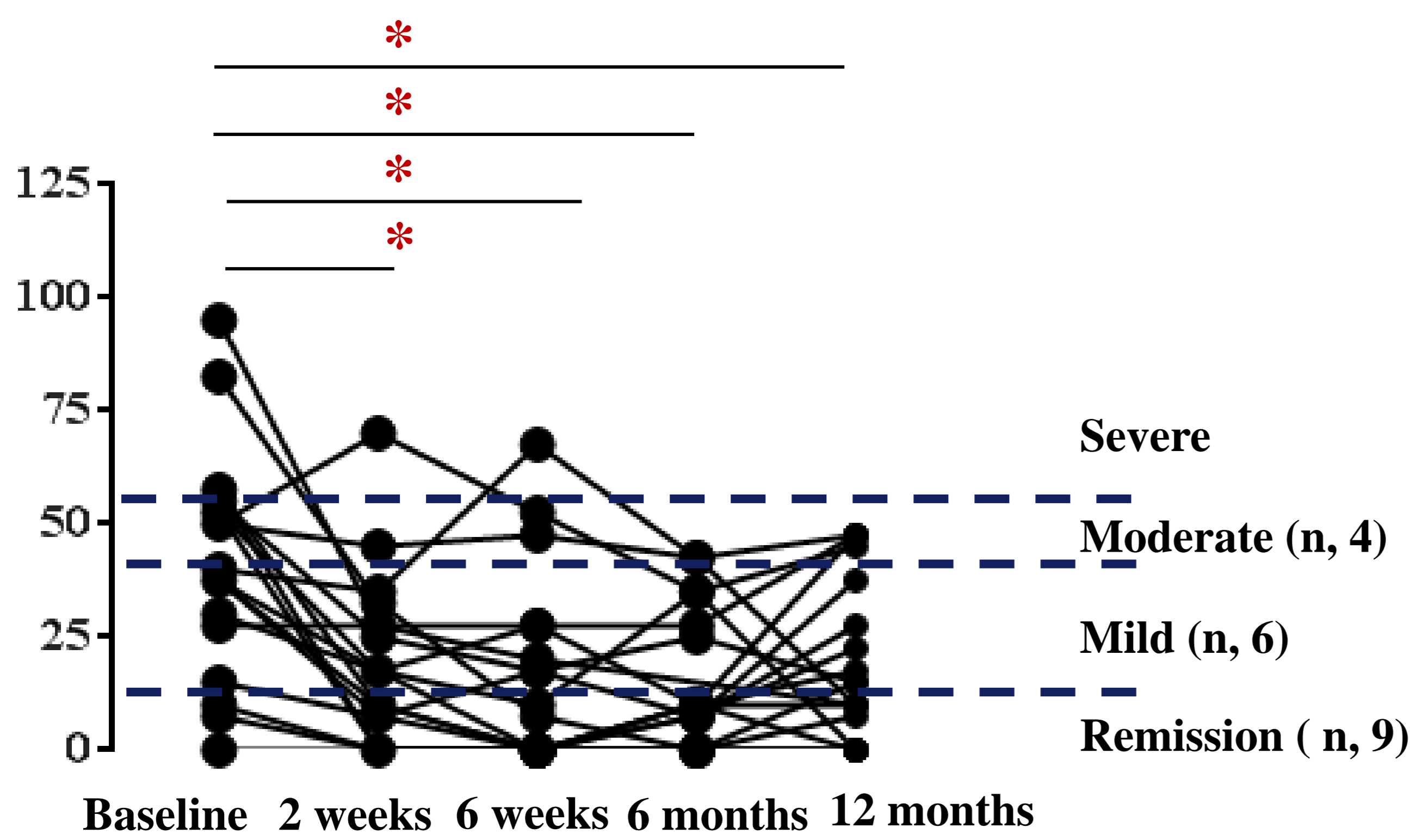
Outcomes measures: Bone and muscle parameters by pQCT at non-dominant distal radius and tibia, IGF axis and bone biomarkers.

## Results

**Table 1: Clinical Details of Patients**

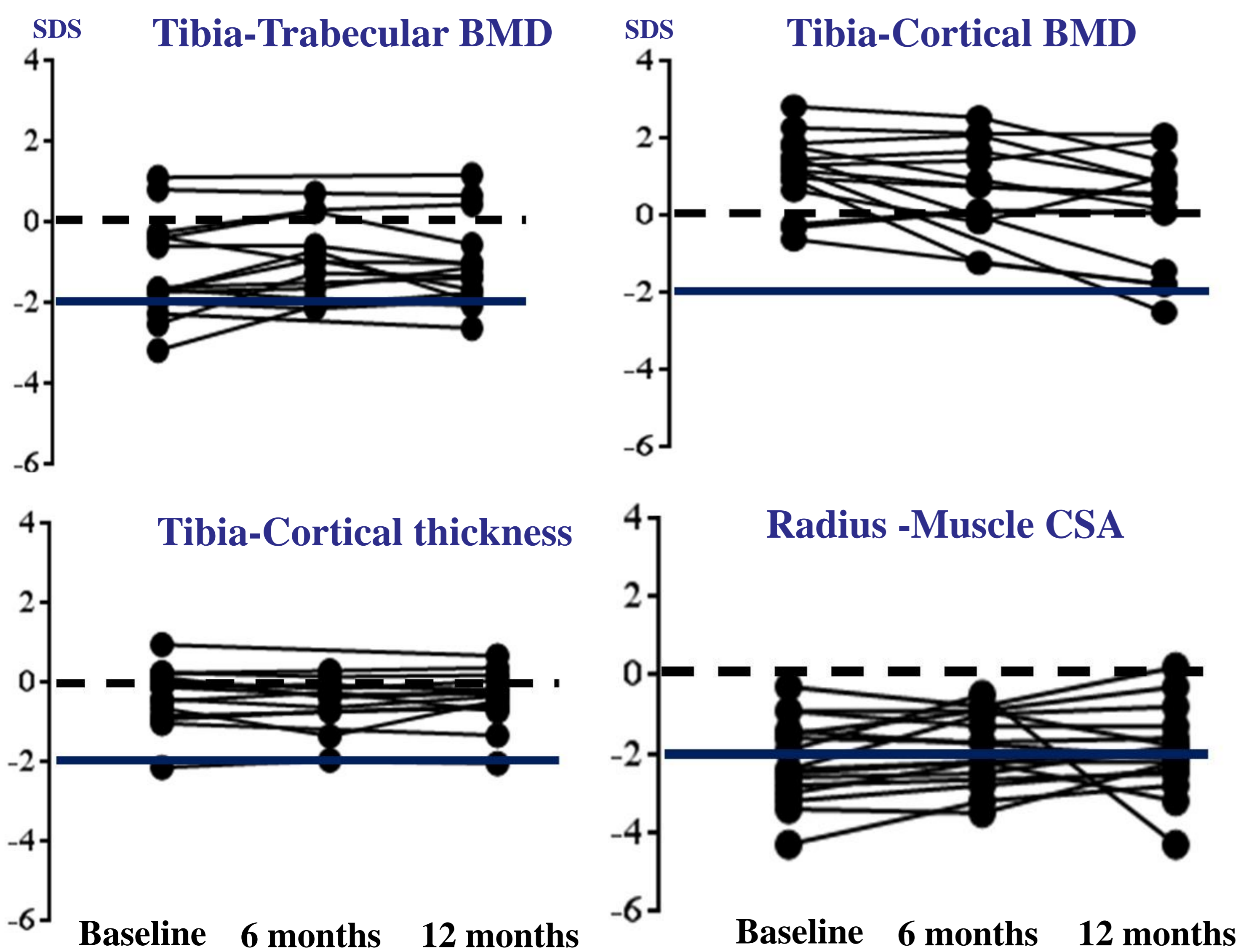
	Baseline	6 months	12 months
Disease Duration (years)	3.1 (0.20, 10.7)		
Age (years)	14.9 (11.2, 17.2)		
Height SDS	-0.7 (-2.7, 1.7)	-0.5 (-2.9, 1.7)	-0.5 (-3.1, 1.9)
BMI SDS	-0.4 (-2.7, 3.2)	-0.4 (-2.3, 2.9)	0.2 (-1.8, 2.7)
IL-6	52 (34, 153)	50 (17.5, 151.5)	44 (22, 116)
Oral Prednisolone	9 (47)	2 (11)	2 (11) *
Pre-pubertal(I)	2 (11)	0	0
Early pubertal(II-III)	8	7	5
Late pubertal (IV-V)	9 (47)	12	14

**Figure 1: Weighted Paediatric Disease Activity Index**



Anti-TNF led to significant improvement in disease (wPCDAI)

**Figure 2: pQCT Outcomes**



Persistent musculoskeletal deficit following 12 months of anti-TNF

## Objectives

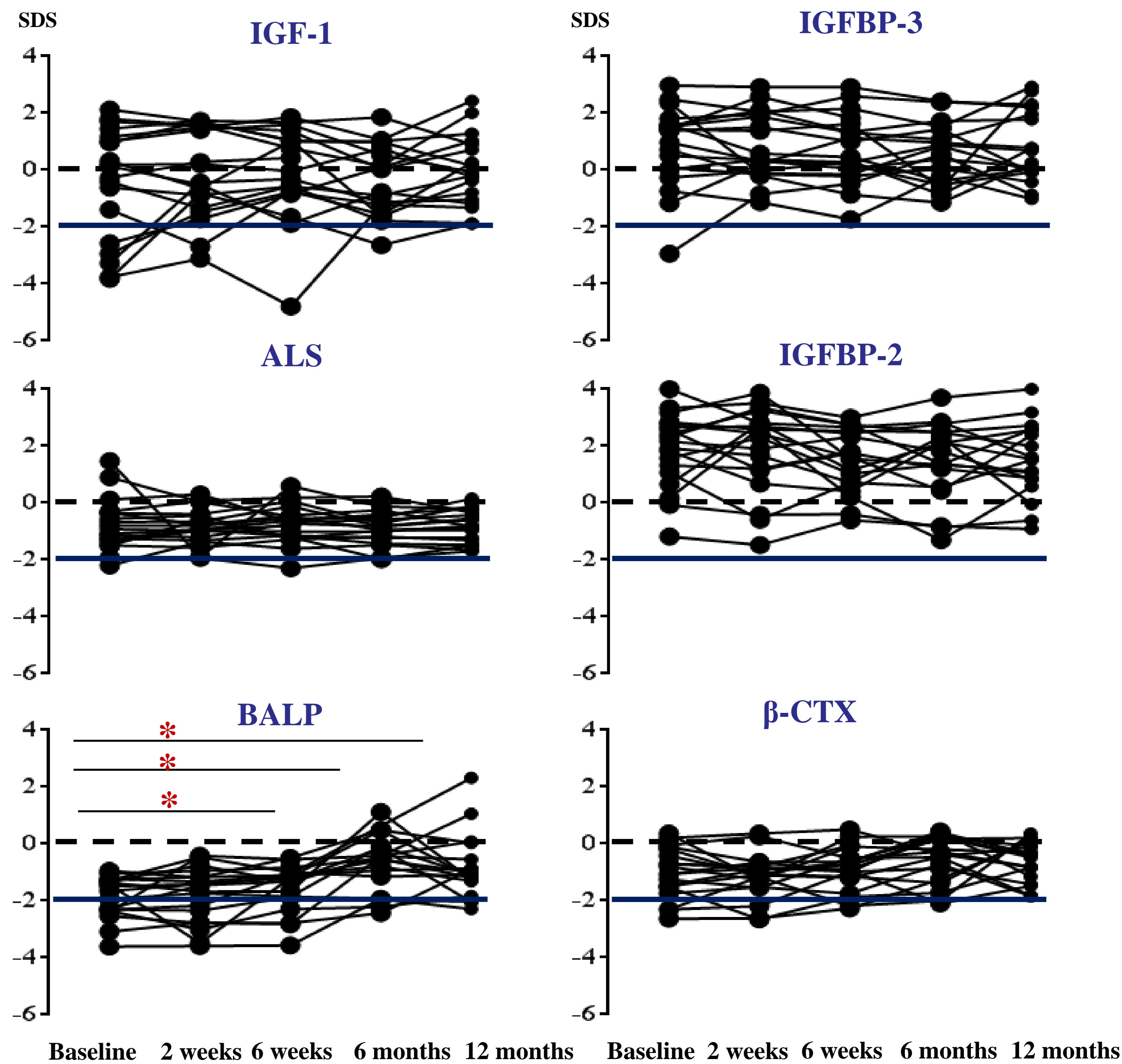
- 1- To assess changes in bone density, geometry and muscle mass after 12 months of anti-TNF in paediatric.
- 2- To assess changes in IGF axis and bone biomarkers after 12 months of anti-TNF in paediatric CD.

## Conclusion

- 1- Improvement in markers of disease and bone turnover 12 months following anti-TNF- $\alpha$  was not translated into meaningful improvements in bone mineral density or geometry.
- 2- Bone mass and geometry were closely related to muscle which remained low.

## Results contd

**Figure 3: IGF axis and bone biomarker**



Anti-TNF led to significant improvement in marker of bone formation

**Table 2: Multivariate Mixed-Model Regression Analysis for pQCT Bone Outcomes (Independent variables: IL-6, glucocorticoids, IGF-1, IGFBP-3)**

Independent variables	Trabecular BMD SDS		Cortical BMD SDS		Cortical Thickness SDS	
	Estimate (SE)	p-value (95%CI)	Estimate (SE)	p-value (95%CI)	Estimate (SE)	p-value (95%CI)
ALS SDS	0.69 (0.29)	0.02* (0.11, 1.28)	-0.18 (0.31)	0.57 (-0.80, 0.45)	0.19 (0.17)	0.30 (-0.17, 0.54)
Muscle CSA SDS	0.427 (0.17)	0.02* (0.09, 0.77)	0.36 (0.18)	0.049* (0.00, 0.71)	0.32 (0.11)	0.003* (0.12, 0.52)

Multivariate analysis showed that muscle was independently associated with all bone parameters

Disclosure Statements: The authors have nothing to disclose