

# REDUCED HUMANIN LEVELS IN CHILDREN WITH TYPE-1 DIABETES MELLITUS

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## BACKGOUNG

- Models of T1DM : role of mitochondrial abnormalities in the pathogenesis of this disease and its complications.
- Humanin is a potent cytoprotective molecule
  - Protection of beta cells from apoptosis
  - Improvements in insulin secretion and action
  - In the NOD mouse model improves B cell

## HYPOTHESES

Humanin levels are decreased in patients with T1DM wich may be related to duration or severity of disease.

## METHOD

We evaluated humanin levels in T1DM and matched controls (C) as a function of HbA1c and microalbuminuria.

### Subjects

T1DM (n=154) / C (n=76) were recruited from the diabetes clinic.

- Physical exam including Tanner staging exam was performed.
- Early morning a blood sample was obtained for determination of HbA1c and humanin levels (ELISA).

## RESULTS

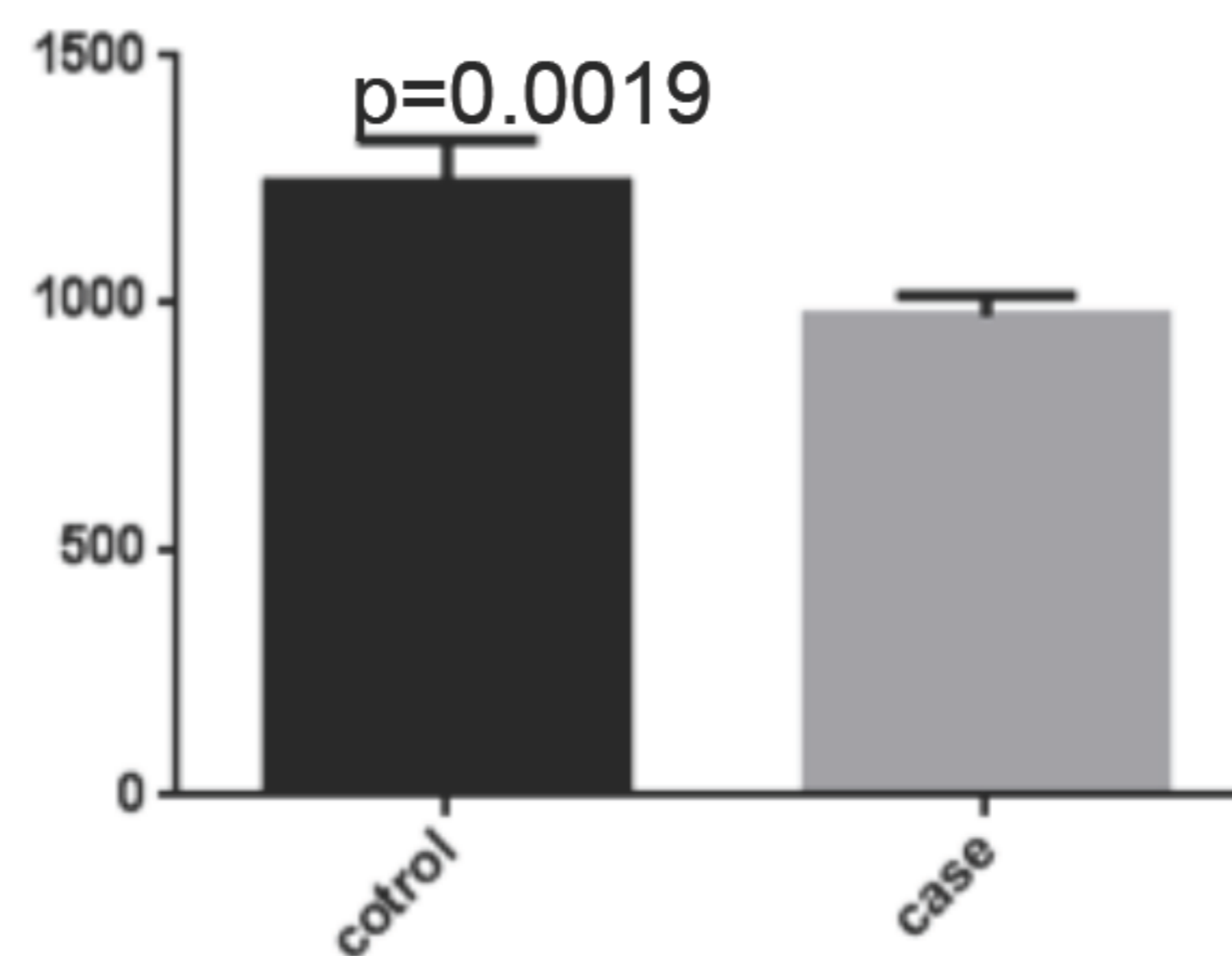
### General characterization of subjects

	T1DM	Control
Number	154	76
Gender (n/%)		
Male	88 (57%)	36 (47%)
Female	66 (43%)	40 (53%)
Age mean (range)	12.9 (3 -21)	10.8 (8.3- 19.7)
Onset of DM (n)		
< 2 years	50	
> 2 years	104	

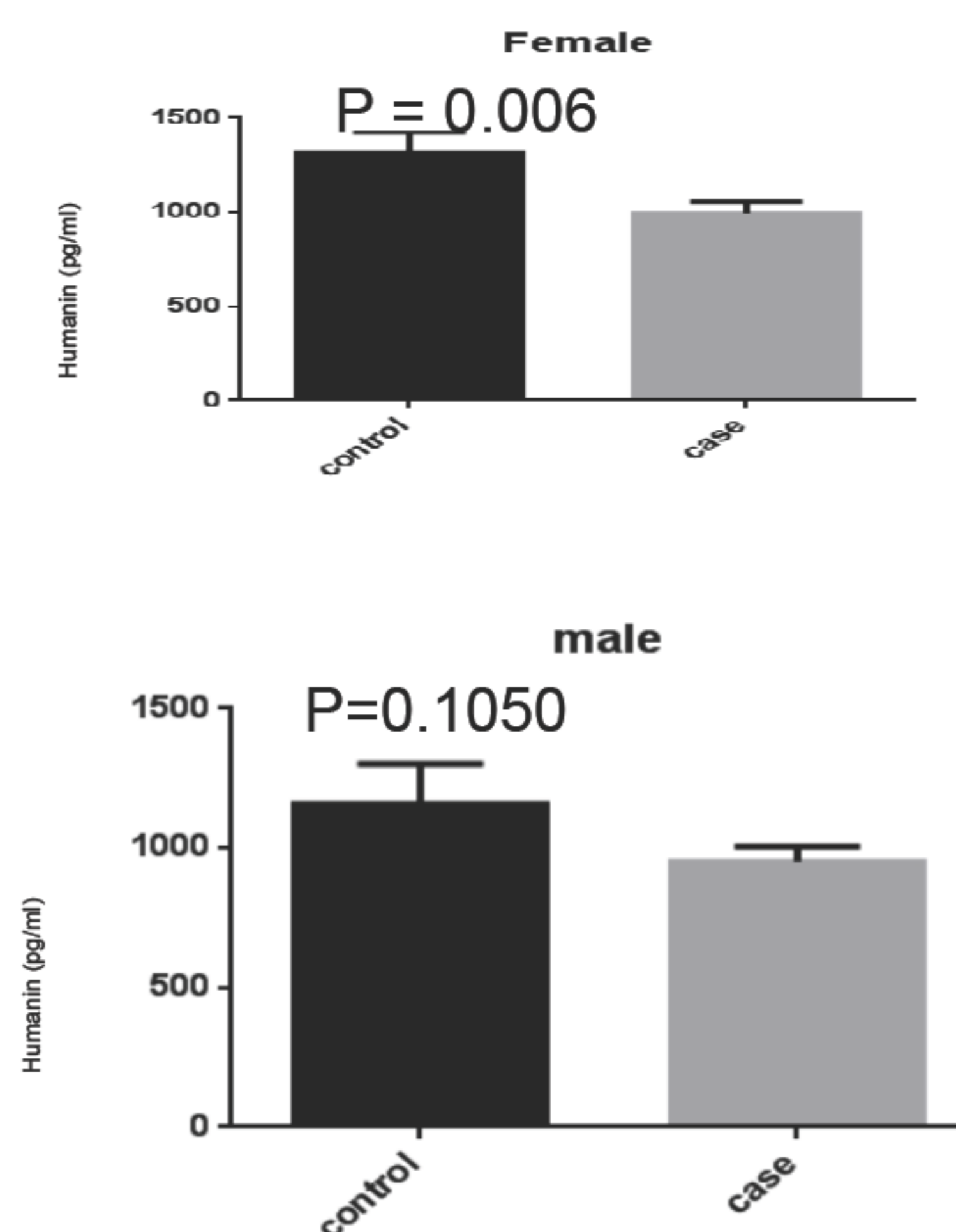
### Humanin Levels according to Tanner stage

Tanner stage	Humanin (pg/ml)				p
	n	Control Level	T1DM Level	N	
1	28	1186	870	48	0.017
2	16	1369	1050	18	0.305
3	8	1969	1021	10	0.031
4	12	1163	983	14	0.400
5	12	989	1016	64	0.899

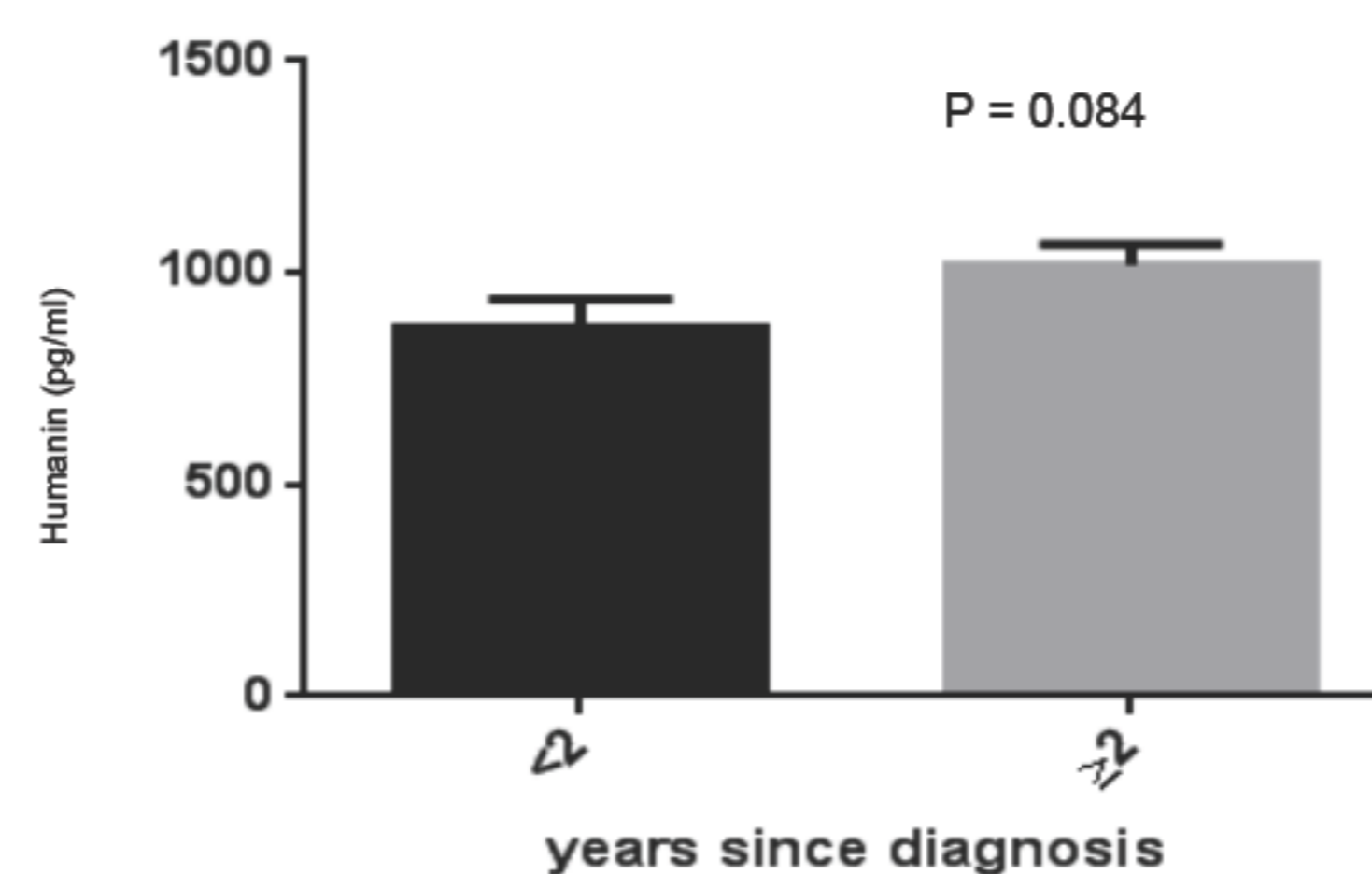
### Humanin Levels in T1DM and C



Humanin levels are lower in T1DM compared to C (974.6±498.3 in T1DM vs 1241.2±782.4 in C)



### Humanin Levels and time since diagnosis of T1DM



No association was observed between duration of T1D, albuminuria or HbA1c.

## CONCLUSIONS

T1DM patients exhibit lower humanin levels, an observation that is especially pronounced in females and in early Tanner stages.

No correlation was observed between the degree of metabolic control/disease duration and humanin levels. Future studies will address the impact of humanin levels on pathophysiology and metabolic control of diabetes.

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