

5 years follow up for 25OHD and iPTH in Vitamin D substituted patients with Diabetes mellitus 1 (DM1): an unicentric prospective study

Claudia Weissenbacher, Ingrid Ricard *, Susanne Bechtold, Julia Roeb, Stephanie Putzker, Michael Marx, Heinrich Schmidt
*Institute for Medical Informatics, Biometry & Epidemiology (IBE), LMU München

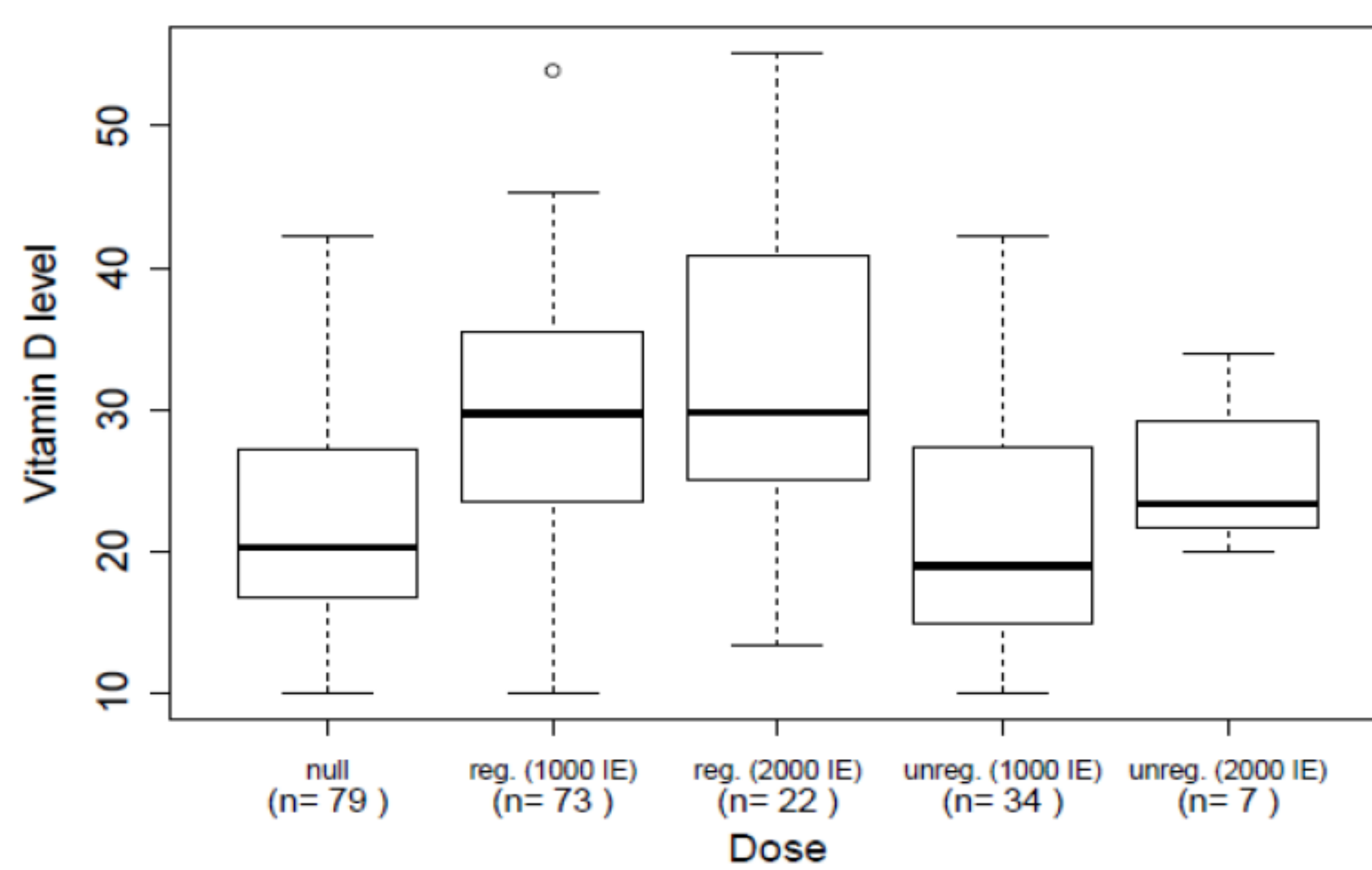
Conclusion: Due to actual limits of 25OHD, 86,3% of non-substituted DM1 patients had Vit D deficiency (<20 ng/ml) and 97,7 % had levels <30 ng/ml (2011). Under 1000 I.E/d Vitamin D during the autumn/winter period: 6,1% of patients had values below 20 ng/ml, 47,7% of patients below 30 ng/ml, and 52,3% of patients > 30 ng/ml (max: 53,9) (2012, 2013, 2014) and under substitution with 2000 I.E/d: 13,6% of patients had values below 20 ng/ml, 54,5% of patients below 30 ng/ml, and 45.4% of patients > 30 ng/ml (max: 55.2)(2015).

Background / Aims:

Vitamin D deficiency/insufficiency seems to occur frequently in children and teenagers but it is a matter of debate if limits (<20 ng/ml; <30 ng/ml) are correct. Besides its effect in bone metabolism Vitamin D is also supposed to have a positive influence in DM1.

Objective and hypotheses: to study 25OHD and iPTH values in a group of patients (n=54) with DM1 *without* Vit D substitution (2011), *with 1000 I.E./d* (2012, 2013, 2014) *and 2000 I.E./d* (2015).

Results:



Contrasts	Estimate	Std. Error	Adj. P-value
regular - none	5.81	1.17	< 0.0001
unregular - none	0.46	1.38	0.94
unregular - regular	-5.34	1.28	<0.0001

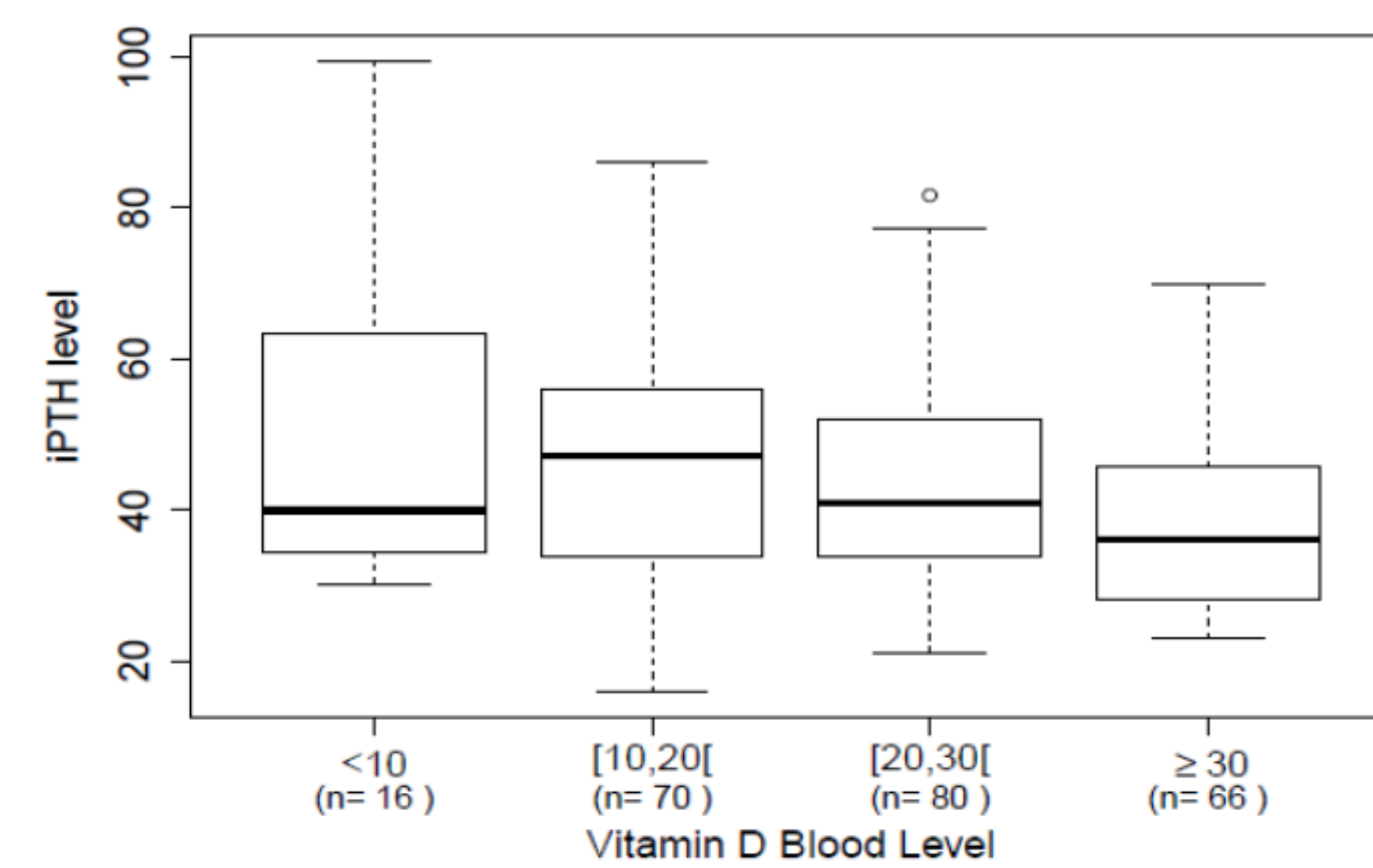
Pairwise comparisons of the vitamin D doses drawn from a mixed effect model with the vitamin D level as response variable, the year and vitamin D dose level as fixed effects, and patient as random effect. The p-values were adjusted for multiplicity using Tukey procedure.

Methods:

n = 54 patients (age: 3-17) followed for 5 years; 2011 no Vit D, 2012, 2013, 2014, 2015 from October - March on Vit D; 1 blood sample each year (January-March: iPTH and 25OHD). Patients and parents were asked about compliance.

	Vitamin D intake			No Vitamin D intake		
	Number of non-missing values	Mean (SD)	Range	Number of non-missing values	Mean (SD)	Range
25OHD < 10	4	48.6 (18.82)	30.2-73.5	6	55.5 (15.94)	39.8 - 78.6
10 ≤ 25OHD < 20	28	46.29 (15.46)	15.9 - 86.2	32	45.55 (11.5)	26.3 - 72.7
20 ≤ 25OHD < 30	50	44.53 (13.9)	21.1 - 81.7	26	39.87 (10.72)	22.6 - 56.9
30 = 25OHD	53	38.84 (12.76)	23 - 69.9	12	36.17 (9.54)	25.9 - 61.8

iPTH descriptive statistics according to Vitamin D group level (in ng/ml), and Vitamin D dose.



Contrasts	Estimate	Std. Error	Adj. P-value
10 ≤ 25OHD < 20 - 25OHD < 10	-0.13	0.08	0.36
20 ≤ 25OHD < 30 - 25OHD < 10	-0.25	0.09	0.02
30 ≤ 25OHD - 25OHD < 10	-0.36	.0.9	<0.001
20 ≤ 25OHD < 30 - 10 ≤ 25OHD < 20	-0.12	.005	0.06
30 ≤ 25OHD - 10 ≤ 25OHD < 20	-0.23	0.06	<0.001
30 ≤ 25OHD - 20 ≤ 25OHD < 30	-0.11	0.05	0.12

Pairwise comparisons of the vitamin D groups drawn from a mixed effect model with log iPTH as response variable the year and vitamin D group level as fixed effects and patient as random effect. The p-values were adjusted for multiplicity using Tukey procedure.

claudia.weissenbacher@med.uni-muenchen.de