



COMMENT ON KRUL-POEL ET AL.

# Effect of Vitamin D Supplementation on Glycemic Control in Patients With Type 2 Diabetes (SUNNY Trial): A Randomized Placebo-Controlled Trial. *Diabetes Care* 2015;38:1420–1426

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We read with interest the article by Krul-Poel et al. (1) that reported the results of a randomized controlled trial on the effect of vitamin D supplementation on glycemic control in patients with type 2 diabetes. The authors did not find any significant improvement of HbA<sub>1c</sub> in the group receiving vitamin D supplementation (129 patients) as compared with the group receiving placebo (132 patients) and concluded that intermittent high-dose vitamin D supplementation did not improve glycemic control in type 2 diabetes. The significant reduction of HbA<sub>1c</sub> obtained in the small subgroup of patients with diabetes with severe vitamin D deficiency (<30 nmol/L) is interesting but not concordant with previous findings, as acknowledged by the authors themselves, which leaves the matter still open.

The major predictor of glycemic improvement after any pharmacological therapy in type 2 diabetes is the starting HbA<sub>1c</sub> level (2,3); it would be interesting to assess whether this relation

(the higher the baseline HbA<sub>1c</sub> level, the higher the HbA<sub>1c</sub> response to vitamin D supplementation) is also present in patients treated with vitamin D. This finds some support from the results by Soric et al. (4) that found a higher decrease of HbA<sub>1c</sub> (−1.4%) during vitamin D treatment in patients with baseline HbA<sub>1c</sub> >9% than in patients with baseline HbA<sub>1c</sub> between 7.0 and 8.9% (0.3%).

Unfortunately, Krul-Poel et al. (1) did not measure the circulating testosterone in the male patients, who made up the majority of their sample. Testosterone levels are often reduced in male patients with type 2 diabetes as a consequence of hypogonadotropic hypogonadism. A high prevalence of vitamin D deficiency has been described in patients with type 2 diabetes with hypogonadism (5); the possibility remains that some men with diabetes and vitamin D deficiency (38% of those evaluated by Krul-Poel et al.) may have associated hypogonadism.

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## References

1. Krul-Poel YHM, Westra S, ten Boekel E, et al. Effect of vitamin D supplementation on glycemic control in patients with type 2 diabetes (SUNNY trial): a randomized placebo-controlled trial. *Diabetes Care* 2015;38:1420–1426
2. Esposito K, Chiodini P, Bellastella G, Maiorino MI, Giugliano D. Proportion of patients at HbA<sub>1c</sub> target <7% with eight classes of antidiabetic drugs in type 2 diabetes: systematic review of 218 randomized controlled trials with 78 945 patients. *Diabetes Obes Metab* 2012;14:228–233
3. Home PD, Shen C, Hasan MI, Latif ZA, Chen J-W, González Gálvez G. Predictive and explanatory factors of change in HbA<sub>1c</sub> in a 24-week observational study of 66,726 people with type 2 diabetes starting insulin analogs. *Diabetes Care* 2014;37:1237–1245
4. Soric MM, Renner ET, Smith SR. Effect of daily vitamin D supplementation on HbA<sub>1c</sub> in patients with uncontrolled type 2 diabetes mellitus: a pilot study. *J Diabetes* 2012;4:104–105
5. Bellastella G, Maiorino MI, Olita L, et al. Vitamin D deficiency in type 2 diabetic patients with hypogonadism. *J Sex Med* 2014;11:536–542

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