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### VITAMIN D AND TYPE 1 DIABETES. THE BIG MISTAKE AND THE HOPE FOR PRIMARY ANSECONDARY PREVENTION

The role of Vitamin-D in innate and adaptive immunity is critical. Redirection of human autoreactive T-cells upon interaction with dendritic cells can be modulated by an analog of 1,25-dihydroxyvitamin D<sub>3</sub>. Moreover, T1D autoantibodies can be “negativated” with oral calcitriol. Based on recent knowledge of the possible involvement of 1,25-dihydroxyvitamin D in the pathogenesis of type 1 diabetes (T1D) and the results of its administration in animal models, we conducted a clinical trial by treating high-risk children, positive for T1D autoantibodies, with oral calcitriol. Daily calcitriol 0.25 mg effectively negativates anti-GAD65 antibodies and IAA after a median time of 6 months. This simple, safe, and low-cost strategy may prove effective in the prevention of T1D in the future (1). Expanding our efforts for secondary prevention using High Doses of Oral Calcitriol (up to 6µg/day) and Paricalcitol (up to 72 µg/day) we have reported a successful interception to the progression to clinical disease for over 3 years in a 10 yr-old boy with Type 1 Diabetes (2). Since 2006, T1D in Finland has been decreasing after an initial plateau preceded by an increase in serum25OHD after the authorities’ decision for fortification of dietary milk products with cholecalciferol. A statistical error in the estimation of the Recommended Dietary Allowance (RDA) for VitaminD was recently discovered, indicating that 8895 IU/day are needed for 97.5% of individuals to achieve values ≥ 50 nmol/l, analyzing correctly the same data used by the Institute of Medicine (3).

1. J Diabetes. 2013 Sep;5(3):344-8. doi: 10.1111/1753-0407.12023. Epub 2013 May 29. Negativation of type 1 diabetes-associated autoantibodies to glutamic acid decarboxylase and insulin in children treated with oral calcitriol. Papadimitriou DT1, Marakaki C, Fretzayas A, Nicolaidou P, Papadimitriou A.
2. Endocrine Reviews Volume 38, Issue 3 Supplement, June 2017. High Doses of Oral Calcitriol (up to 6µg/day) and Paricalcitol (up to 72 µg/day) Have Successfully Intercepted Progression to Clinical Type 1 Diabetes for over 3 Years in a 10-Year-Old Boy.
3. J Prev Med Public Health. 2017 Jul;50(4):278-281. doi: 10.3961/jpmph.16.111. Epub 2017 May 10. The Big Vitamin D Mistake. Papadimitriou DT.

#### Biography

Dimitris T. Papadimitriou received his MD, his PhD on Pediatric Endocrinology and his specialty on Pediatrics at the University of Patras, Greece. He subsequently received a master in pediatric endocrinology from the Paris V University, and a master in Medical Pedagogy at Joseph-Fourier University (Grenoble, France), where he worked as a Lecturer (CCU) for 2 years. Since December 2005 he is Director of the Department of Pediatric-Adolescent Endocrinology and Diabetes of the Athens Pediatric Center in Athens and a Scientific Associate - University Scholar of the 3rd Pediatric Clinic of the University of Athens at Attikon Hospital.

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