

17. COMPLETE REMISSION OF TYPE 1 DIABETES MELLITUS

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Introduction. Typically people diagnosed with type 1 diabetes mellitus (T1DM) are treated with insulin for the rest of their life in order to substitute the lost function of beta cells. In the beginning of the treatment some patients may regain lost function of beta cells for some time. This phase is called honeymoon period and such recovery can be partial (when only minimal doses of insulin are needed) or complete (when patients do not require any insulin or oral medication at all – it is extremely rare and pathogenesis is not clear yet). This case is about a 23 year old woman with complete remission of T1DM.

Case presentation. A 21 year old woman visited a general practitioner complaining of thirst and dry mouth. Random plasma glucose (PG) levels were 6,02 mmol/L and 6,69 mmol/L. Glucose tolerance test was: fasting PG – 7,15 mmol/L, two-hour PG – 9,25 mmol/L. C-peptide – 1,3 mmol/l (within the normal range). Because of the typical symptoms of diabetes mellitus and glycemia > 7,0 mmol/l the patient was diagnosed with T1DM. Moreover, increased levels of antiGAD65 (2,94 nmol/L) were found which also confirmed the diagnosis of T1DM. The patient was prescribed insulin Toujeo (4 units per day) and the usage of it resulted in the reduction of symptoms and corrected PG levels, so the woman discontinued using insulin for more than one year and still does not use it. Because of a long period of T1DM remission and suspicion of MODY the patient was consulted by a geneticist. Mutations of GCK, HNF1A and HNF4A genes were not detected, so the diagnosis of MODY was not confirmed. Also, some cases of T2DM and gestational diabetes were found in woman's family history. Because of the pregnancy the patient at the age of 23 was consulted by a gynecologist and no abnormalities were found as well. Consultation of the endocrinologist was also indicated for further observation and treatment of T1DM. Her glycemias and HbA1c were in normal ranges without any episodes of hypoglycemia during the entire pregnancy period and PG levels were successfully controlled by diet only. Afterwards in the 40 weeks of gestation the woman gave birth to a healthy girl weighing 3200 grams. After the birth the patient was absent with DM symptoms and levels of PG were normal as well.

Discussion. Complete remission of T1DM is immensely infrequent with a rate of 0% to 3,2%. It occurs because of normalization of sensitivity to insulin and transient recovery of beta cells. Pathogenesis of this process remains unclear but it is predicted to be related to IL-10-dependent T-cell regulatory pathways.

Conclusion. This case of complete remission of T1DM before, during and after pregnancy is surprising and raises even more questions which answering them may reveal a new approach to diabetes mellitus development and pathogenesis.