NEW ONSET TYPE 1 DIABETES MELLITUS AFTER VACCINATION FOR MEASLES: COINCIDENCE OR CONSEQUENCE?

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BACKGROUND

➢ Type 1 diabetes mellitus (T1DM) is one of the most common metabolic diseases in childhood: Epidemiological data, collected by worldwide population-based registries, shows an increasing incidence of diabetes over the past 20 years, turning the illness into the most frequent chronic disorder.

➢ It is hypothesized that genetic and environmental factors (either of toxic or viral origin) may contribute to diabetes susceptibility. The adaptive immune response genes (HLA) still provide the major contribution to the onset of Type 1 diabetes, but understanding how viral or bacterial infections, vaccines or dietary components or simply stress determine an autoimmune reaction in certain individuals is still a matter of interest.

➢ The occurrence and significance of autoimmune manifestations after the administration of viral vaccines remain controversial.

➢ Herein we have represented a case who developed type 1 diabetes one month after vaccination for measles in military.

CASE

➢ 25-years-old male patient admitted to our clinic with the complaints of polyuria, poydipsia and weight loss. When we questioned his personal history, we have learnt that he had measles vaccination in the army, one month ago.

➢ In the initial labaratory examinations, plasma glucose was 400 mg/dl, dipstick urine test was ++++ ketone and there was metabolic acidosis with anion gap. After treatment of diabetic ketoacidosis, we skipped to intensive insulin treatment with short and long acting anologue insulins.

➢ Since he had very low c peptide level together with positive anti glutamic acid decarboxylase (Anti GAD) and Anti-islet antibodies, he was diagnosed to have T1DM. His anti thyroid peroxidase antibody (Anti TPO) was positive and had thyroiditis on thyroid ultrasonography.

➢ We have screened other components of autoimmune syndrome and found that celiac markers and Antiparietal antibodies were negative. He had adequate cortisol response to short cosyntrophin test. He was discharged after regulation of blood glucose levels.

Table. Labaratory data of the patient

	Lab	Normal range
Plasma Glucose	400mg/dl	70-199
Urea	28 mg/dl	10-48
Creatine	1 mg/dl	0.1-1.2
Na	127 mg/dl	136-145
K	4.2 mmol/l	3.5-5
ALT	29 U/L	0-41
insulin	4.54 µU/ml	2.6-24.9
C- peptide	0.2 ng/ml	0,1-3.6
Anti -GAD	50.15 u/ml	0-1
Anti-islet	positive	negative
Urine keton	+++	0
Art. Ph:	7.28	3.35-7.45
HCO3	12 mmol/l	15-25
TSH	3 uIU/ml	0.4-4.5
Anti-TPO	240 IU/ml	0-34
Cortisol	5 µg/dl	6-19

CONCLUSION

➢ Very few patients may develop some autoimmune diseases following viral vaccination (in particular; arthropathy, vasculitis, neurological dysfunction and thrombocytopenia).

➢ To date, there are controversial results concerning the implication of viruses in human β-cell autoimmunity. Further investigations based upon the temporal relationship between viral diseases and onset of Type 1 diabetes might help to design more accurate national and international prevention strategies.

➢ For the majority of people, vaccines are safe and no evidence linking viral vaccines with type 1 diabetes, multiple sclerosis (MS) or inflammatory bowel disease can be found.

➢ However there are rare cases in the literature reporting new onset autoimmune diabetes after vaccination. Therefore, it might be reasonable to screen patients who are prone to diabetes for the signs and symptoms of diabetes after vaccination.