INTRODUCTION

- Glutamic acid decarboxylase (GAD65) is expressed by pancreatic beta cells and also by GABA (gamma-aminobutyric acid)-secreting neurons.
- Anti-GAD65 antibodies (antiGAD Ab) are found in most patients with autoimmune diabetes Mellitus (DM), as in rare neurological syndromes (the most common being stiff person syndrome).
- Cerebellar ataxia is the second most common neurological syndrome associated with antiGAD Ab.

CASE REPORT I.

- C.O., male, 69 years old.
- Medical history:
  - obesity
  - atrial fibrillation
  - benign prostatic hypertrophy
- 2010 (64 years old): dysarthria + ataxic gait

Neurology department (jan 2011):

Neurological examination: marked cerebellar dysarthria; kinetic and static ataxia; evoked multidirectional nystagmus; altered vibration sensation and proprioception

Etiology study of ataxia (antineuronal antibodies, MRI, CSF study, tumor markers, thyroid hormones, vitamins): negative, except for antiGAD65 Ab

AntiGAD65 Ab 13.3 U/mL (<1.0)
ICA negative
Anti-insulin Ab negative
Anti-IgA Ab 1.30 U/mL (<1)
C-peptide 6.7 ng/mL (1.0-7.6)

# antiGAD65 Ab ataxia

Nov 2011 & Jan 2012: intravenous human immunoglobulin therapy (30g id, 5 days) – improvement of neurological signs and symptoms

DM: diagnosed 2010 (64 years old), initially medicated with oral antidiabetic agents and with premature need for insulin therapy, 4 years after diagnosis, for chronic inadequate metabolic control. Improved after intensification of insulin therapy.

HbA1c dec/2014: 6.8% → nov/2015: 10.1% → feb/2016: 6.5%

CASE REPORT II.

- M.S., female, 68 years old, normal weight
- Medical history:
  - paraplegic after vertebro-medul lary traumaism
  - arterial hypertension
  - DM since the age of 60 – difficult metabolic control with oral agents for 5 years, insulin added in 2012 – sustained significant glycemic lability
- 2015 (68 years old): progressive positional vertigo, dysarthria and diplopia

Neurology department (set 2015):

Neurological examination: flaccid paraplegia; kinetic ataxia of upper limbs; dysarthria; vertical nystagmus

eTiology study of ataxia: negative, except for antiGAD65 Ab

AntiGAD65 Ab 239.07 U/mL (<1.0)
ICA positive
Anti-insulin Ab 0.23 U/mL (<0.4)
Anti-IgA Ab 0.00 U/mL (<1)
C-peptide 0.4 ng/mL (1.0-7.6)
HbA1c 7.3%

# antiGAD65 Ab ataxia

Dec 2015: intravenous human immunoglobulin therapy (30g id, 5 days) – improvement of neurological signs and symptoms

DM: Consdering the analytical results, oral antidiabetic agents were suspended and she initiated multiple daily injections of insulin with significant reduction of glycemic lability

CONCLUSION

- The autoimmune etiology of DM can be considered in any age group, especially when other autoimmune conditions are present. An accurate DM classification allows therapeutic adjustment and metabolic control optimization.
- In both the presented cases, age at diagnosis, positive autoimmunity for DM and absence of need for insulin therapy for more than 6 months after presentation, suggests the diagnosis of LADA (Latent Autoimmune Diabetes in Adults).
- In patients with DM and positive autoimmunity, with neurologic disorders not explained by diabetic neuropathy and after exclusion of other causes, ataxia associated with antiGAD Ab can be considered.