METFORMIN TREATMENT OF HYPOTHALAMIC OBESITY – THE LESSON OF TWO CASES

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INTRODUCTION

- Hypothalamic obesity (HO) - a syndrome of intractable weight gain as a result of hypothalamic lesions [1]
- Causes: craniopharyngioma (more than 50 % of the cases), other posterior fossa tumors, infiltrative diseases of the hypothalamus, head trauma or pseudotumor cerebri [1,2]
- Treatment: lifestyle interventions, pharmacotherapy (sympathomimetic drugs and drugs that counteract the increased vagal tone) and surgery
- Metformin - antidiabetic drug also used in nondiabetic obese patients as it has been demonstrated that it promotes weight loss. Metformin alone has not been tested in patients with HO
- We present two cases of HO (an adult and a pediatric patient) in which successful weight loss was obtained following treatment with Metformin

CASE PRESENTATION 1

- 44 year old female patient admitted for: headache, visual acuity loss in both eyes, secondary amenorrhea, polyuria, polydipsia
- Cranial CT scan -> craniopharyngioma
- October 2006 – transcranial surgery, November 2009 – second surgery (tumor recurrence)
- Following surgeries: severe HO (she gained 45 kg)
  - panhypopituitarism treated with 5 mg Prednosis/day, 100 µg Euthyrox/day, Clinara 1 patch/week, Duphaston 10 mg/day, 10 days/month
  - diabetes insipidus treated with Minirin MELT 120 µg 2x1/day

CASE PRESENTATION 2

- 6,4 year old female patient admitted for: chronic headache, decreased growth
- Cerebral MRI: suprasellar tumor -> transcranial surgery
- Histopathologic diagnosis: mixed germ cell tumor (grade 3 immature teratoma and germinoma) -> chemotherapy and radiotherapy
- Following surgery:
  - panhypopituitarism treated with 2.5 mg Prednosis/day, 75 µg L-Thyroxine/day
  - diabetes insipidus treated with Minirin MELT 60 µg 2x1/day
  - severe hypothalamic obesity (she gained 32 kg in 2.5 years)
  - dyslipidemia + steatohepatitis

DISCUSSION AND CONCLUSIONS

- Hypothalamic obesity is a severe, debilitating disease that affects a large proportion of the patients with hypothalamic lesions, leading to multiple complications and an impaired quality of life.
- Both our patients developed hypothalamic obesity following surgery for craniopharyngioma and teratoma respectively. They experienced rapid weight gain which was resistant to lifestyle interventions and Sibutramine or Orlistat therapy.
- Metformin proved to be safe, well tolerated and effective in promoting weight loss in our two patients.
- Hamilton et al., 2011 observed a decrease in weight gain and BMI in children with HO due to intracranial damage, after 6 month of treatment with Metformin and Diazoxide [5].
- Larger, long-term and placebo-controlled studies are required in order to confirm the efficiency of Metformin alone in patients with hypothalamic obesity.

REFERENCES