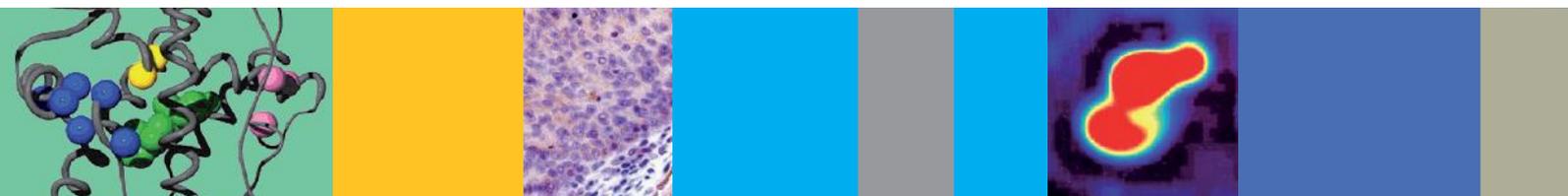


# Endocrine Abstracts

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434 were actually treated with the molecules of interest between the 1st of January 2009 and the 31st of December 2018. 113 patients with biological anomalies compatible with endocrine immune-related adverse events were found. Thyroid function anomalies and hypophysitis were the most frequent endocrine side effects. No cases of adrenalitis, autoimmune diabetes or parathyroiditis were identified. In our study population, 22.3% of patients (97/434) presented an alteration of the thyroid function. It was more frequent with combined treatments (47.3% of the patients on anti-CTLA-4 and anti-PD-1) and with anti-PD-(L)1 molecules (20.1%). Hypothyroidism can occur following transitory hyperthyroidism. Hypophysitis was shown in 5.3% of patients (23/434). It was mostly due to combined treatment (36.8% of the patients treated with the association) and to anti-CTLA-4 therapies (7.7%). Pituitary damage led to hormonal deficiency. Central adrenal insufficiency was observed in 73% of these patients followed in frequency by hypogonadotropic hypogonadism (56.5%) and central hypothyroidism (30.4%). Recovery of the thyroid and gonadal axes was encountered in 57 and 46% of cases respectively. The recovery is inconstant and does not depend on the administration of systemic glucocorticoids.

#### Conclusions

Endocrine immune-related adverse events are frequent and can be severe. An early diagnosis and, consequently, the appropriate management would help reduce the morbidity, sometimes even the mortality and would allow to pursue the immunotherapy.

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## 007

### Low dose continuous IV etomidate for severe Cushing's syndrome in the non-critical care setting: a clinical study

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#### Introduction

Severe Cushing's syndrome (CS) is defined by extremely high serum cortisol levels (usually >1000 nM), along with severe and deadly complications, including sepsis, heart failure, acute psychosis, vascular thrombosis, digestive haemorrhage and bowel perforation. Rapid control of such hypercortisolism is mandatory and has been shown to decrease operative mortality and complications. Oral treatments such as ketoconazole and metyrapone are often inadequate in the face of life threatening complications and limited oral intake possibilities. Etomidate is a hypnotic agent widely used in general anaesthesia induction, while also being one of the most potent inhibitors of 11- $\beta$ -hydroxylase and therefore of cortisol secretion<sup>1</sup>. Low dose continuous intravenous (IV) infusion of etomidate has been shown to rapidly decrease cortisol levels in patients with severe CS in the ICU setting<sup>iii</sup>, without causing harmful side effects (myoclonus or adrenal crisis). A safe use of etomidate has been also suggested for similar indication in the non-ICU setting<sup>iv</sup>.

#### Aim of the work

We retrospectively analysed the efficacy and safety of low dose IV etomidate infusion in five patients with severe and complicated CS treated in our (non ICU) Endocrinology unit between 2012 and 2018.

#### Main results

All five patients were male, with an average age of 53.4 years, and all had cancer: Three had cortisol secreting adrenal carcinomas and two had ectopic ACTH secretion from a malignant neuro-endocrine tumour. All patients had several complications before treatment, including infections, vascular thrombosis, cardiac failure, severe hypertension and/or uncontrolled diabetes. Median cortisol levels on admission were 1288 nM (range 751–2301 nM) (Figure 1). Etomidate (Hypnomidate® 20 mg/10 ml propylene glycol solution, Janssen pharmaceuticals) was administered through a peripheral IV catheter at a starting dose of 0.03 mg/kg/h. Infusion rate was then adjusted by 0.5 mg/h increments in order to achieve morning cortisol levels between 200 and 300 nM. Mean effective etomidate rate was 3 mg/h and the average number of days before reaching cortisol levels <500 nM was 4.2. Median morning cortisol level upon discontinuation of etomidate was 306 nM (range 183–479 nM). No adverse effect related to treatment was noted (in particular no somnolence) and no propylene glycol related adverse effects were noted (no renal failure, phlebitis, or haemolysis). Four out of five patients survived after etomidate discontinuation, being subsequently treated by primary tumor resection, mitotane and/or bilateral adrenalectomy. The single patient who died had a 16 cm adrenal tumour with peritoneal carcinomatosis and a poor performance status (ECOG 3–4) that precluded surgery or chemotherapy. The decision was made, together with the patient and his family, to stop etomidate and enter palliative care.

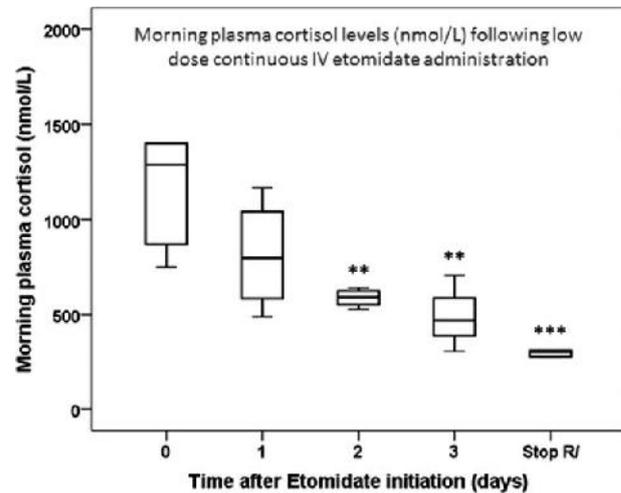


Figure 1.

#### Conclusion

We report a case series of 5 patients treated in a non-intensive care unit with low dose continuous IV etomidate for severe and complicated Cushing's syndrome. Treatment was rapidly successful in reducing cortisol levels below 500 nmol/l within 3–5 days and did not result in any treatment related adverse effects.

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## 008

### Study of neuroendocrine deficits in a series of 74 patients following traumatic brain injury

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#### Aim of the work

Clinical research studies over the last 15 years have reported a significant burden of hypopituitarism in survivors of traumatic brain injury (TBI). However, these endocrine anomalies remain under diagnosed due to nonspecific clinical signs and misunderstanding of the phenomenon. The aim of the work is to evaluate for the first time in Belgium their prevalence and to quantify the deficits of the different pituitary axes in patients recruited to the endocrinology consultation of a university center.

#### Main results

We studied the data of 74 patients. The prevalence of neuroendocrine disorders in this series is 37.84% (28/74). The biological explorations found: somatotrophic deficits (19/28), gonadotrophic deficits (9/28), corticotrophic deficits (8/28), thyrotrophic deficits (3/28), prolactin deficiency (3/28), prolactin excess (1/28), and diabetes insipidus (1/28). Deficiencies are most often isolated (19/28) rather than associated (9/28). Isolated somatotrophic deficiency is the most common (12/28, 42.86%). TBI patients with endocrine deficiencies had significantly higher BMI ( $30.14 \pm 4.62$  versus  $24.62 \pm 4.62$  kg/m<sup>2</sup>,  $P < 0.001$ ) than TBI patients without hormonal deficiencies. This can be partly explainable by body composition changes induced by GH deficiency. Indeed, the median BMI of our patients with somatotrophic deficiency is significantly higher than in the other patients, while there is no significant difference in BMI for the other deficits. It should be noted that there are not enough cases of disorders of the lactotrophic axis and diabetes insipidus to assert a statistically significant difference.

#### Conclusion

TBI and their consequences are a major public health problem, and hypopituitarism occurs in about 1/3 of cases. No formal risk factors have been identified but it seems that the severity of the trauma is often related to the occurrence of post-traumatic hypopituitarism, although they are encountered in a significant number of mild head injuries. The primary lesions are mechanical and the secondary lesions are vascular. Brain imaging can show lesions or be normal. Most often, only one pituitary axis is affected, and most frequently the somatotrophic axis. Deficits can resolve or have a delayed onset. The signs and

symptoms of post-traumatic hypopituitarism are most often nonspecific, so that they are not frequently detected. Their prevalence would be underestimated, and their routine screening could ensure that non-tumor causes of hypopituitarism exceed tumor causes.

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009

**Risk of Malignancy of the Thyroid Nodule Evaluated by Scintigraphy**  
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Background

Thyroid nodules are a common finding in clinical practice. Among classic risk factors for thyroid cancer, thyroid scintigraphy has traditionally been attributed prognostic value, with cold nodules implying greater risk. However, research supporting this assumption is of considerable age and possibly influenced by selection bias. In this study, we aimed to calculate the risk of malignancy in cold and hot nodules.

Material and Methods

All thyroid nodules that underwent both thyroid scintigraphy and pathologic characterisation (cytology and/or histology) in a 5-year period at a tertiary centre were retrospectively analysed. Cancer rates were calculated in cold and hot nodules. Furthermore, rates of malignancy were calculated taking into account several established and more controversial risk factors for thyroid carcinoma, in order to identify subgroups with greater risk for cancer.

Results

343 thyroid nodules were included for study. Cancer rates were 7.7% in cold nodules (N=248) and 5.3% in hot nodules (N=95). Thyrotropin levels were lower in hot nodules (P=0.000), and levels were higher in cancerous cold nodules compared with benign cold nodules (P=0.014). A cancer rate of 26.7% was noted in cold nodules with elevated anti-thyroglobulin levels. In all other subgroup analyses, the rate of malignancy in cold nodules was never higher than cancer rates suggested by literature for nodules in the general population. Although similar observations were made for hot nodules, no definite conclusions were drawn as there were too few hot nodules to perform statistical tests.

Conclusion

Our findings suggest that cold nodules are not high-risk nodules by definition, as their cancer rates were not notably higher than the risk of malignancy proposed in literature for nodules in the general population. Therefore, we discourage the use of thyroid scintigraphy for the selection of cold nodules for further pathologic characterisation.

DOI: 10.1530/endoabs.64.009

010

**Effect of nationwide reimbursement of sensor-augmented pump therapy in a paediatric type 1 diabetes population on HBA1C, hypoglycaemia and quality of life: The rescue-paediatrics study**  
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Hospital, Hasselt, Belgium; <sup>10</sup>Department of Paediatric Endocrinology, Saint-Luc Hospital Brussels, Woluwe-Saint-Lambert, Belgium; <sup>11</sup>Department of Paediatric Endocrinology, General Hospital Delta, Delta, Canada; <sup>12</sup>Department of Paediatric Endocrinology, Regional Center Hospital Liège, Brussels, Belgium; <sup>13</sup>Department of Paediatric Endocrinology, General Hospital Sint-Jan Bruges, Brugge, Belgium; <sup>14</sup>Fund for Scientific Research (FWO), Senior clinical investigator fellow, Brussels. <sup>†</sup>Joint First Authorship; <sup>‡</sup>Joint Last Authorship; <sup>§</sup>RESCUE study, ClinicalTrials.gov: NCT02601729.

Background

Long-term real-life data of sensor-augmented pump therapy (SAP) in paediatric type 1 diabetes (T1D) patients are lacking.

HbA1c data

