(HypoPT) under routine clinical care. The secondary objective is to characterize the clinical course of chronic HypoPT under conditions of routine clinical practice. At enrollment, registry inclusion criteria are patients having a HypoPT diagnosis >6 months and receiving conventional therapy (CT; eg, calcium supplements and active vitamin D), rhPTH(1-84) plus CT, or rhPTH(1-84). We present baseline characteristics of patients as of a June 30 2019 data cut. Baseline was defined as the value entered at the time of enrollment (Visit 1). Baseline symptom data exclude patients who initiated rhPTH(1-84) prior to enrollment (n=68) and are herein presented as two groups: those subsequently prescribed with rhPTH(1-84) after enrollment or those treated with CT. All data are summarized descriptively. Patient data from 64 centers in Europe and North America were analyzed. In the analysis population (n=737), 587 patients (79.6%) were female, 620 (84.1%) were white, and the mean (SD) age was 49.1 (16.45) years. The mean (SD) BMI was 19.3 (5.73) kg/m^2 and 30.0 (7.72) kg/m^2 in patients aged <18 (n=25) and ≥18 (n=587) years, respectively. The primary cause of HypoPT was thyroid surgery (n=547 [74.2%]; of these, 281 [60.0%] underwent surgery for thyroid cancer). Endocrinologists were the prescribing specialists for most patients (n=660 [89.6%]). Vitamin D and analogs were prescribed for 90.1% of patients (calcitriol, 74.2%, native vitamin D, 47.4%, alfacalcidol, 7.9%,), calcium for 81.0% (calcium carbonate, 57.9%, calcium citrate, 27.1%), and thyroid hormones for 71.2% (levothyroxine, 73.4%; liothyronine, 5.8%). Symptoms reported at enrollment for the rhPTH(1-84) (n=66) and the CT groups (n=603), respectively, included fatigue (53.0%, 39.3%), paresthesia (48.5%, 29.2%), muscle twitching (48.5%, 21.1%), muscle cramping (40.9%, 33.0%), headaches (33.3%, 17.6%), anxiety (28.8%, 20.1%), muscle pain (28.8%, 19.2%), tetany (28.8%, 12.1%), and brain fog (27.3%, 16.3%). The baseline data for the overall population appear to be representative of patients with chronic HypoPT. Baseline data suggest that at enrollment patients prescribed rhPTH(1-84) after enrollment appear to have an increased burden of disease than patients receiving CT based on symptoms. PARADIGHM will be a valuable resource of real-world longitudinal data for patients with chronic HypoPT.

Tumor Biology

ENDOCRINE NEOPLASIA CASE REPORTS I

Combination Immune Checkpoint Inhibitor Therapy for ACTH-Secreting Pituitary Carcinoma

Jeroen M.K. de Filette, M.D.[1], Bastiaan Sol, MD[1], Gil Awada, MD[1], Sandrine Aspeslagh, MD, PhD[1], Corina E. Andreescu, MD, PhD[1], Bart Neyns, MD, PhD[1], Brigitte Velkeniers, MD,PHD[2].
[1]University Hospital of Brussels, Brussels, Belgium, [2]UZ Brussel, Brussels, Belgium.

SUN-923

Introduction

Pituitary carcinoma is a rare yet serious entity with poor prognosis despite multimodal therapies. Cerebrospinal and/or systemic metastases are present by definition, making adjuvant systemic therapy necessary. Novel treatments are urgently needed for refractory cases. Immunotherapy with immune checkpoint inhibitors (ICI) targeting cytotoxic T-lymphocyte antigen-4 (CTLA-4), programmed cell death 1 (PD-1) or its ligand (PD-L1) has been a revolution in multiple malignancies. The expression of CTLA-4 and PD-L1 has been elucidated in pituitary adenomas and could be implicated in pituitary carcinomas as well. Hypophysitis is also a frequent endocrine immune-related adverse event, especially during CTLA-4 blockade (with ipilimumab) or combination ICI. However, the efficacy of ICI in the treatment of refractory pituitary tumors has yet to be established. In 2018, Lin et al. successfully treated a first case of a hypermutated aggressive ACTH-secreting pituitary carcinoma with ipilimumab (anti-CTLA-4) and nivolumab (anti-PD-1) combination immunotherapy.

Clinical Case

We report a 40-year old male, diagnosed with an invasive ACTH-secreting pituitary macroadenoma in 2012, initially treated by transsphenoidal and transcranial surgery, followed by adjuvant stereotactic radiotherapy and several courses of ketoconazole. In 2017, he presented to our clinic for a recurrent Cushing's phenotype despite maximal dosing of ketoconazole. Therapy both with pasireotide and cabergoline was unable to normalize cortisol levels and a bilateral (subtotal) adrenalectomy was performed. In June 2018, he presented to our emergency department with acute diplopia due to a left abducens nerve palsy. Imaging revealed recurrent invasion of the tumor into the sella turcica and cavernous sinus, together with cerebellar and drop metastases at the cervical spine. Temozolomide (TMZ) was initiated for a total of 9 cycles. Progressive disease was observed with development of new onset right oculomotor nerve palsy after the last TMZ cycle, and persistence of elevated serum ACTH-cortisol and urinary cortisol levels, despite the absence of radiological progression. Therefore, he was started in a compassionate use setting with a combination ICI therapy with ipilimumab 3 mg/kg and nivolumab 1 mg/kg (for 4 cycles), followed by maintenance nivolumab therapy (240 mg) every two weeks. He has stable disease (both radiographically and hormonally) five months after the initiation of the immunotherapy.

Clinical Lesson(s) or Conclusion(s)

We report the second case of ACTH-secreting pituitary carcinoma treated with combination ICI therapy. The disease status of the patient is stable up until now, suggesting at least disease control by the immunotherapy. Checkpoint blockade inhibitors are a promising novel treatment modality for refractory pituitary tumors and should be further studied.

Neuroendocrinology and Pituitary

HYPOTHALAMIC-PITUITARY DEVELOPMENT AND FUNCTION

Integrative Single-Cell Transcriptomic and Epigenomic Landscape of Mouse Anterior Pituitary Cell Types

Frederique Murielle Ruf-Zamojski, PhD[1], Michel A. Zamojski, PhD[1], German Nudelman, Phd[1], Yongchao Ge, PhD[1], Natalia Mendelev, MS[1], Gregory R. Smith, PhD[1], Xiang Zhou, MS[2], Chirine Toufaily, Ph.D.[3], Gauthier Schang, BS[2], Luisina Ongaro Gambino, PhD[2], Hanqing Liu, BS[4], Rosa G. Gomez Castanon, BS[4], Mika Moriwaki, BS[5], Venugopalan Nair, PhD[1], Hanna Pincas, PhD[1], Joseph R. Nery, BS[4], Anna Bartlett, BS[4], Andrew Alridge, BS[4], Angela Katherine Odle, Ph.D.[6], Gwen V. Childs, PHD[7], Judith L. Turgeon, PHD[8], Corrine Kolka Welt, MD[9],