

## OP-T-04

### INCIDENCE AND CLINICAL PROFILE OF CANCER PATIENTS WITH IMMUNE CHECKPOINT INHIBITORS-INDUCED ENDOCRINE SIDE EFFECTS IN THE UNIVERSITY OF SANTO TOMAS HOSPITAL: A 5-YEAR RETROSPECTIVE STUDY

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#### INTRODUCTION

Immune checkpoint inhibitors (ICIs) are relatively novel drugs in medical oncology which has led to improved care for advanced cancers. Referrals to endocrinology have been increasing because ICIs were associated with endocrine-related adverse effects including hypophysitis, hypothyroidism, hyperthyroidism, diabetes, and adrenalitis. Hence, the study aims to retrospectively determine the local prevalence and profile of patients who developed endocrinopathies during ICI therapy at the University of Santo Tomas Hospital (USTH) from 2013-2019.

#### METHODOLOGY

This was a retrospective study of adult ICI-treated cancer patients with a review of serial monitoring of endocrine adverse effects (i.e., thyroid function test, fasting blood glucose or HbA1c, hormonal screening tests, and/or imaging tests for pituitary or adrenal dysfunction) in USTH upon approval by the Research Ethics Committee. There was a follow-up period of 2 years after the initiation of the first dose of ICI therapy.

#### RESULTS

Out of the 65 patients who were started on ICIs, a total of 27 subjects satisfied the inclusion criteria with a median age of 60 years and male predominance. Pembrolizumab consists of 93% of ICIs. The incidence of thyroid dysfunction was 36% (18% overt hypothyroidism, 9% subclinical hypothyroidism, and 9% subclinical hyperthyroidism). The median time at risk for developing overt hypothyroidism is one month with a median TSH level of 9.05 uIU/mL. All patients who had baseline hypothyroidism worsened with an increase from baseline levothyroxine dose by 50 to 230% to achieve euthyroidism ( $p = 0.037$ ). Serial monitoring was done every 2 weeks until euthyroidism. ICIs were temporarily put on hold in 75%. Diabetes ( $p = 0.05$ ), renal carcinoma ( $p = 0.001$ ), and a dose of 200 mg ( $p = 0.42$ ) were associated with developing overt hypothyroidism. Checking glycemic levels was not routine among non-diabetic patients. Fifteen percent of diabetic patients had worsening of control (median HbA1c 8.5% [8-9]) and 23% were newly diagnosed pre-diabetes (median fasting glucose 114 mg/dL [104-120]). No patients had abnormal adrenal metabolic and pituitary uptake on PET scans. Routine or symptom-prompted baseline biochemical testing for adrenalitis and hypophysitis was not done.

#### CONCLUSION

Overt hypothyroidism is a common occurrence during ICI therapy (18%). Worsening occurred among all patients with hypothyroidism at baseline. New-onset pre-diabetes and worsening of glycemic control were seen in 15 and 23%, respectively. No biochemical testing for adrenalitis and hypophysitis was available.

#### KEYWORDS

immune checkpoint inhibitors, endocrinopathies, hypothyroidism, diabetes