metastasis in this neoplasia and, to the authors’ knowledge, little is known regarding the incidence, patterns of clinical presentation and disease progression, and outcomes.

**Objective:** The aim of this report was to describe the clinical characteristics of adult patients with ACC who developed brain metastasis evaluated at a tertiary oncological center (ICESP) from Brazil.

**Methods:** Retrospective analysis of medical records including evaluation of laboratory and imaging exams and pathologic data (in cases where surgical resection of the metastasis was performed).

**Results:** In the last ten years (2009-2019), fifty-four patients have been treated for ACC at ICESP; all of them with advanced disease (locally advanced disease and metastatic disease). The median age at the time of diagnosis of ACC was 44 (range 24-61 yrs.). No patients presented metastasis at central nervous system (CNS) at the initial diagnosis; however, during follow-up, we identified brain metastasis in six patients (11.1%). The median time between ACC diagnosis and the detection of brain metastasis was 20.8 months (range 5-53 mo.). In all of these six cases, at least three other sites of metastatic involvement were already present when the brain involvement was diagnosed and, therefore, all of them had already been treated with mitotane in association with at least one line of cytotoxic chemotherapy. The number of brain metastasis in each of these six patients varied from one to eight and median size of lesion was 1.7 cm (range 0.5-4.0 cm). Secondary headache and seizure were the main symptoms of presentation and one or two of these symptoms occurred in all but in one patient, in which diagnosis was due to screening with brain MRI. In four patients with stable disease elsewhere, surgical resection of one or two brain metastases was performed. In these cases, SF1-positive immunohistochemistry confirmed the adrenocortical origin of the lesion. The median time between CNS metastasis detection and death was 3.8 months (range 0.4-59.6 mo.), and complications due to brain metastasis were the leading cause of death.

**Conclusions:** In our institute, brain metastasis occurred in 11.1% of advanced ACC, a prevalence that is higher than previously reported in literature. Despite the relative small number of patients included in this study, we highlight the possibility of brain metastasis in patients with ACC, particularly in cases with a prolonged disease course and multiple systemic treatments.

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**Neuroendocrinology and Pituitary**

**CASE REPORTS IN SECRETORY PITUITARY PATHOLOGIES, THEIR TREATMENTS AND OUTCOMES**

**Use of Double Dopamine Agonists in Giant Prolactinomas: A Series of 6 Cases**

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**SAT-247**

Dopamine agonist monotherapy is first line therapy in giant prolactinomas even when visual field defect is present. The costlier cabergoline is often preferred over bromocriptine due to higher efficacy and tolerability profile. Described herein combined cabergoline and bromocriptine therapy in 6 cases of giant prolactinomas. Retrospective records review of 6 patients with giant prolactinoma (3 males: M1-M3, 3 females: F1-F3) in a single tertiary centre was performed. Mean age at diagnosis: 29 years (range 17-39). Mean duration of follow up: 7 years (range 3-11). Headache and visual field defect were the presenting symptoms in all cases. Basal prolactin concentration: 10000 to 468851 mIU/L (<300 for male, <600 for female). Three patients have hypopituitarism at presentation, one after surgery and one remained eupituitar years 5 after diagnosis. One developed late onset hypopituitarism 4 years after normalisation of prolactin levels. Three patients underwent debulking at presentation because of significant mass effects with obstructive hydrocephalus. In all patients cabergoline 1-1.5 mg/wk was started at diagnosis and gradually increased to 0.5 mg daily, aiming for normoprolactinemia. From May 2017 bromocriptine were given to these patients who continued to have hyperprolactinemia despite cabergoline 3.5-4mg/wk. Bromocriptine was commenced 1.25-5mg/day and gradually increased to 10 mg/day on top of cabergoline with careful monitoring of prolactin levels and side effects. Cabergoline was tapered down to 1.5-2mg/wk if prolactin levels remained stable between 2-3x normal while maintaining dose of bromocriptine. In M1, cabergoline was tapered off while maintaining bromocriptine 10mg/day with stable prolactin levels (~1000 mIU/L). In M2, normoprolactinemia was achieved after adding on bromocriptine and is currently on cabergoline 2mg/week and bromocriptine 10mg/day. In M3, whose prolactin were 4x normal value despite cabergoline 3.5mg/week, decreased 50% with bromocriptine 5 mg/day and remained stable when cabergoline reduced to 1.5mg/week. F1 had transphenoidal section twice due to failure of medical therapy. Her prolactin remained markedly elevated 10000-20000 mIU/L despite cabergoline 3.5 mg/week and bromocriptine 10mg/day, with persistent bitemporal hemianopia. F2 developed erythema nodosum after starting bromocriptine which was stopped and continued with cabergoline 1 mg/week. F3 showed partial response with 50% reduction in prolactin to 4485 mIU/L with bromocriptine 10 mg/day and cabergoline 1.5mg/week. In patients who underwent debulking, residual tumour remained unchanged. Two patients - tumour shrank 40% (F2) and 90% (M3) with medical therapy alone. In conclusion, adding on bromocriptine can be considered when high dose cabergoline is required for treatment of giant prolactinoma with careful monitoring. This reduces cabergoline dose which saves cost.

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**Genetics and Development (including Gene Regulation)**

**ENDOCRINE DISRUPTING CHEMICALS**

**Computational Study of the Effect of Androgen Receptor BF 3 Site Mutations on DDE Binding**

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**SAT-712**

Exposure to endocrine disrupting chemicals (EDCs) affects the function of the androgen receptor (AR) causing...
reproductive system problems such as reduced sperm counts, increased infertility, testicular dysgenesis syndrome, and testicular and prostate cancers, as well as reduced bone mass and diabetes mellitus in males. Experimental results have shown that the presence of EDCs such as the diphenyl compound DDT and its analogue DDE, allosterically cause the release of the stably bound dihydrotestosterone (DHT) from the steroid binding site of the AR ligand binding domain. It was hypothesized that EDCs mediate this effect via binding to the Binding Function 3 (BF 3) surface binding site. Five mutations of three BF 3 amino acids (F673K, F673W, G724R, G724M, and L830D) showed that the ability of DDE to inhibit AR activity was reduced, suggesting that DDE binds to the BF 3 site and allosterically regulates AR activity. In this study, the Induced Fit Docking protocol of the Schrodinger software was used to dock DDE into the BF 3 site of the wild type AR ligand binding domain as well as the five mutant BF 3 sites. The docking poses generated for each receptor were clustered and representative structures were selected. The receptor-ligand complexes were energy minimized using the Schrodinger module Macromodel. Finally, the energy of interaction between DDE and the BF 3 site amino acids was evaluated for each of the selected docks of the wild type and mutant receptors. The relationship between the energies of interaction and the experimental results for DDE inhibition of the mutant AR activities will be discussed.

**Adrenal**

**ADRENAL - HYPERTENSION**

**Cardiac Damage and Related Risk Factors in Patients with Primary Aldosteronism**

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**MON-213**

Primary aldosteronism (PA) is the most common cause of secondary hypertension. Overseas flow surveys show that compared with essential hypertension (EH), the risk of cardiovascular and cerebrovascular diseases and kidney damages in PA patients is increased, and the mortality rate of cardiovascular events is higher than that in EH patients, in addition, this effect is independent of elevated blood pressure. The difference of cardiac damage between PA and EH patients was analyzed by echocardiography. **Methods**

From April 28, 2017 to April 28, 2019, patients with primary aldosteronism diagnosed by ICD in Department of Endocrinology and Metabolism, Department of Cardiology and Urology were extracted from the adrenal group database of the Department of Endocrinology and Metabolism, West China Hospital of Sichuan University, and ICD diagnosis in Department of Endocrinology and Metabolism during the same period was also extracted. In patients with essential hypertension, the differences of clinical indicators and echocardiography between the two groups were compared, and the differences of cardiac damage and related risk factors between the two groups were explored. **Results**

295 patients were included in this study, including 148 patients in PA group (50.17%) and 147 patients in EH group (49.83%). There was no significant difference in gender, age, BMI, course of disease and average blood pressure between the two groups (P > 0.05). The levels of serum aldosterone and BNP in PA group were significantly higher than those in EH group, and the levels of serum renin and minimum blood potassium were significantly lower than those in EH group (P < 0.05). Left ventricular diameter (L), left atrial diameter (LA), interventricular septal thickness (IVS), left ventricular posterior wall thickness (LVPW), ascending aorta diameter (AAO), end-diastolic diameter (EDD), end-diastolic volume (EDV) and stroke volume (SV) in PA group were significantly higher than those in EH group (P < 0.05). It was significantly higher than that in EH group (P < 0.05). The correlation analysis of variables with statistical significance between the two groups showed that serum renin activity level was negatively correlated with LV, AAO, EDD and SV, and the lowest serum potassium level was negatively correlated with LVPW and AAO. **CONCLUSION**

Compared with EH of the same age, course of disease and blood pressure level, PA patients are more likely to suffer from cardiac damage, which is manifested by heart growth, ventricular septal thickening and cardiac function decline, and is closely related to the inhibition of serum renin activity and serum potassium level. Clinical attention should be paid to early screening and treatment of PA and its complications in order to reduce the risk of cardiac death. **Key words:** primary aldosteronism; echocardiography; cardiovascular risk factors

**Adrenal**

**ADRENAL - HYPERTENSION**

**Real World Performance of Urinary and Plasma Metanephrine Assays in Diagnosing Phaeochromocytoma/Paraganglioma**

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**MON-220**

Introduction:

Diagnosis of pheochromocytoma/paraganglioma (PGL) can be challenging. Plasma metanephrines have highest sensitivity (96-99%) yet lowest specificity (85%) whereas 24-hour urinary metanephrines have 87.5% sensitivity and 99.7% specificity. Diagnostic accuracy depends on factors such as patient positioning and medications, questioning its potential value in a hospital setting. **Methods**

The audit was performed in a hospital which caters to a population of 400,000. Data was collected retrospectively on patients who had a request for plasma or urine metanephrines from March 2018 – September 2018. **Results**

A total of 85 patient order requests (58% male, 42% female) were reviewed; only 2 patients were ultimately diagnosed with a pheochromocytoma. The mean age of patients was 48 years. The most common indication for requests was hypertension (64 patients). Locations of order requests included 42% from outpatient clinics, 32% inpatient requests, 18% from Ambulatory

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