

Weight and waist circumference differences pre- and post-Ramadan were not significant; there was more weight reduction (-1.48 vs -0.53 kg) and waist circumference reduction (-1.07 vs +1.50 cm) with NovoMix 30.

#### CONCLUSION

Humalog Mix 50 demonstrated similar efficacy and safety compared to NovoMix 30 during Ramadan in T2DM with a potential benefit on fructosamine reduction.

## PA-A-51

### EUGLYCAEMIC DKA CASES: TWO CAUTIONARY TALES

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#### INTRODUCTION

Euglycaemic diabetic ketoacidosis (euDKA) presents with a triad of high anion gap metabolic acidosis, ketonemia and normal blood glucose. It has been increasingly reported with the increased use of SGLT-2 inhibitors. Here, we describe two euDKA cases of different aetiologies.

#### CASES

The first case is a 29-year-old pregnant female with type 1 diabetes diagnosed at 8 years old with good control pre-partum (HbA1c 6.8%) and only 1 previous DKA at diagnosis. During pregnancy, glycaemic control worsened, requiring high doses of insulin. She presented at 33 weeks of gestation with reduced fetal movement alongside epigastric discomfort, vomiting and dyspnoea. Ultrasound by her obstetrician revealed no fetal movement and investigations showed high anion gap metabolic acidosis with pH 6.9, bicarbonate 12 nmol/l while capillary blood glucose (CBG) was 10.3 mmol/l and serum ketone was 6.5 mmol/l. EuDKA precipitated by intrauterine death was diagnosed, treatment was started and patient underwent C-section. Postoperatively, acidosis and ketonaemia resolved and CBG was controlled with low dose insulin.

The second case is a 56-year-old female with poorly-controlled type 2 diabetes (HbA1c 12%) who was diagnosed with upper gastrointestinal bleeding. Blood investigations showed CBG 8.5 mmol/l, normal blood gasses and disproportionate urea:creatinine ratio. She was kept nil by mouth while waiting for gastroscopy. Eight hours later she developed tachypnoea and worsening epigastric pain; repeat blood investigations showed pH 7.0, bicarbonate 17 nmol/l, CBG 11 mmol/l and serum ketone 4.3 mmol/l. EuDKA was diagnosed and she was treated promptly and acidosis and ketonaemia resolved.

#### CONCLUSION

These two cases illustrate the need for a high index of suspicion for euDKA in diabetics undergoing stressful conditions and the importance of measuring serum ketone in metabolic acidosis even in patients with normal blood glucose.

## PA-A-52

### METASTATIC BLADDER PARAGANGLIOMA WITH UNDERLYING SHDB MUTATION

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#### INTRODUCTION

Phaeochromocytoma and paraganglioma (PPGL) are rare tumors with up to 40% associated with inherited germline mutations. SHDB mutation is associated with an increased risk of metastasis.

#### CASE

A 36-year-old male presented with hypertensive emergency. He was diagnosed to have a bladder paraganglioma at age 32 when he presented with hypertensive crisis. Ga-68 DOTANOC PET/CT scan then showed a localized 4.7 x 5.3 cm bladder paraganglioma and he underwent complete surgical resection with resolution of his symptoms. Genetic testing done showed SHDB, deletion (exon 1), heterogenous pathogenic variant. He remained asymptomatic and was lost to follow-up due to COVID-19 until his recent admission.

During this admission, he had labile blood pressure with symptoms of palpitations and lethargy. He was found to have a 4.3x elevated urine normetanephrine (1639 ug/day, N<374.7). Metanephrine and 3-methoxytyramine levels were normal. His blood pressure was controlled with phenoxybenzamine 20 mg TDS (1 mg/kg), telmisartan 40 mg OM and carvedilol 25 mg BD with improvement in his symptoms. Subsequent anatomical imaging with CT and functional imaging with Ga-68 DOTATATE showed a small recurrence at the bladder wall with metastatic lesions at the left sacral ala measuring 4.5 x 5.1 cm, and multiple lytic lesions over the spine, ribs and also the left acetabulum with the highest uptake of Ga-68 DOTATATE at the C2 vertebra (SUV max 93). He is now planned for peptide receptor radionuclide therapy (PRRT).

SHDB mutation is associated with a higher risk of metastatic disease which has remained unexplained. Treatment for metastatic disease include surgical resection where possible, targeted therapy such as PRRT, meta-iodobenzylguanidine (MIBG) therapy, radiotherapy and also systemic therapy such as chemotherapy and tyrosine kinase inhibitors.

## CONCLUSION

Patients with PPGL, especially those with SHDB mutation, require monitoring at regular intervals to screen and detect metastasis to reduce mortality and morbidity.

## PA-A-53

### A CASE OF HASHIMOTO'S THYROIDITIS IN A PATIENT WITH HEPATITIS C: THE EFFECT OF DIRECT-ACTING ANTIVIRAL (DAA)

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## INTRODUCTION

The first discovery of a Hepatitis C Virus (HCV) association was found in mixed cryoglobulinemia. Multiple organs and systems were then affected including the thyroid. HCV may interfere with the functions and mechanisms of self-recognition of both the immune system and thyroid cells and may directly destroy thyroid tissue or mimic the structure of some components of the thyroid gland, thereby initiating autoimmune disease. Interferon (IFN) is a drug used in treating HCV, and studies have shown that IFN-induced thyroid autoimmunity can cause both hyperthyroidism and hypothyroidism.

## CASE

A 45-year-old Malay male with underlying diabetes mellitus was admitted for difficulty of breathing and was diagnosed with Hashimoto's thyroiditis with positive anti-TPO and anti-thyroglobulin antibodies complicated with pericardial effusion in 2018. His liver enzymes were abnormal and investigations revealed that he had HCV with liver cirrhosis secondary to heroin use in 2018. He was treated with DAA for 6 months in 2019. Repeated investigations showed that he achieved sustained virologic response (SVR).

After SVR, his thyroxine dosage remained at 1.4 mcg/kg/day, ensuring compliance to medication timing. No antibodies were repeated. In terms of upper gastrointestinal bleeding, ascites, or bleeding tendency, the development of hypothyroidism did not seem to worsen liver cirrhosis.

## CONCLUSION

The above case shows that DAA had no impact on thyroid autoimmunity in preexisting Hashimoto's thyroiditis with HCV. Nonetheless, variations in the accuracy of the test techniques and other variables, such as iodine consumption and drugs, contribute to this discrepancy. Patients with HCV infection and autoimmune thyroid disease are influenced by a complex network of cytokines, chemokines, and their receptors. To determine how beneficial these mediators may be as thyroiditis prognostic indicators in the follow-up of HCV positive patients, more research with bigger populations are required.

## PA-A-54

### POOR KNOWLEDGE BUT GOOD ATTITUDE TOWARDS ANABOLIC ANDROGENIC STEROIDS AMONG STUDENTS IN A LOCAL TERTIARY INSTITUTION

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## INTRODUCTION

Non-medical use of anabolic androgenic steroids (AAS) is a widespread public health concern, with up to 8% of university students using it for aesthetic purposes. Studies have reported poor knowledge and attitude towards AAS among university students. Our study aims to study the knowledge and attitude on AAS among male undergraduate students in University Tunku Abdul Rahman (UTAR).

## METHODOLOGY

One thousand three hundred eight (1308) male university students were recruited via convenience sampling and given an online self-administering questionnaire between December 2021 – February 2022. The questionnaire documented their socio-demographic parameters, as well as assessed their knowledge and attitude towards AAS.

## RESULTS

68.6% of our respondents had poor knowledge on AAS; students from the urban campus or those who spent >30 minutes in the gym had significantly higher knowledge. Interestingly, the level of knowledge on AAS was lower among students who participated in competitive sports. Most of the students were not aware that AAS abuse may affect their mental health or even result in other complications such as gynaecomastia. On the contrary, 83% of the students had a good attitude towards AAS. There was a significant association between family history of AAS use and poorer attitude. Most of the students (79.1%) admitted they would not use AAS in the future, while only 7.7% agreed that AAS should be used freely among athletes. Only 35% agreed that the public should be allowed access to AAS under medical supervision. There is a significant but mild positive correlation between the knowledge scores and attitude scores among the participants.

## CONCLUSION

Our study is the first in Malaysia that depicts poor knowledge but good attitude of male university students towards AAS. Hence, there is a need for university students to be exposed to information regarding AAS abuse and its complications.