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Introduction: Hypoglycemia among non-diabetics is rare. The etiologies range from drugs, critical illnesses, hormone deficiencies, autoimmune or insulinomas. Diagnosis of symptomatic hypoglycemia includes the evaluation for Whipples Triad: symptoms of hypoglycemia, plasma glucose concentration less than 55 mg/dL, and resolution of symptoms after plasma glucose is increased. This case report details symptomatic hypoglycemia secondary to concurrent illicit drugs use.

Case Description: A 32 year-old Caucasian female with a history of homelessness and polysubstance abuse was admitted for dizziness and lethargy for several days. There was no known history of diabetes. Initial labs were significant for hemoglobin A1C was 5.3% with glucose level of 31 mg/dL. Glucose improved to 73 mg/dL after 2 intravenous boluses of 50% dextrose. Subsequently, her glucose levels continued to drop to as low as 10 mg/dL prompting additional rounds of D50W boluses and glucagon. ACTH and morning cortisol levels were normal; insulin antibody level, serum and urine ketone, and alcohol level were negative. Urine drug screen was positive for MDMA, marijuana, and cocaine. Her pro-insulin, C-peptide levels and insulin levels were elevated at 19.36 ng/mL and 164.2 mcNl Units/mL, respectively. MRI abdomen was unremarkable for insulinoma or mass. However, a sulfonylurea level came back positive for glimepiride. Given this positive sulfonylurea finding along with her history of illicit drug usage, she was diagnosed with symptomatic hypoglycemia secondary to sulfonylurea and amphetamine usage confounded by marijuana usage. She was safely discharged to a homeless shelter with recommended follow up to the endocrine clinic in two weeks.

Discussion: Glimepiride stimulates pancreatic insulin secretion leading to elevated pro-insulin and C-peptide levels. She denied taking any medication. Given that she experienced hypoglycemic episodes after the ingestion of her illicit drugs, we speculated glimepiride must have been added by her drug supplier. Glimepiride has a half-life of 6-10 hours meaning her hypoglycemic symptoms should have abated within a day. Since her hypoglycemia persisted for several days, this raised suspicions of another contributing factor. A case report by Carrera et al demonstrated amphetamines and THC associated with hyperinsulinemia-induced hypoglycemia. Given the similarity to Carrera et al, the diagnosis of hyperinsulinemia-induced hypoglycemia secondary to sulfonylurea concurrent with amphetamine and THC usage. The pathophysiology of amphetamines and THC-induced insulin secretion is unclear. This case report emphasizes the importance of maintaining a wide differential for hypoglycemia including polysubstance abuse.

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Abstract #1185162

Association of the prognostic biomarkers for COVID-19 with grade of Hyperglycemia in T2DM with Mild to Moderate COVID-19 managed through Teleconsultations- A Two Center Cohort Study

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Objective: Uncontrolled hyperglycaemia is associated with poor clinical outcomes among patients with COVID-19. Diabetes mellitus and hyperglycemia at presentation, are independent risk factors for disease severity and worse outcome of COVID-19 infection.

Methods: We evaluated the association of biomarkers of COVID-19 (CRP, D-Dimer and Ferritin) with the random blood sugar (RBS) as reported through SMBG by the patients who were already under regular care, across two dedicated diabetes centres. We compared the levels of CRP, D-Dimer and Ferritin across the groups with RBS < 200 and with RBS ≥ 200. Normal values: CRP 0-5 mg/L, D-Dimer < 0.5 mg/dL, Ferritin 30-400 ng/mL.

Results: The mean age of the patients was 59 years (SD±13, 95% CI 58 to 60). 256 were male. In our cohort, 378 (87%) were mild cases and 56 (12.9%) were moderate cases. The mean RBS in mild cases at the first consultation was 198 mg/dL (SD±45, 95% CI 170 to 231). The mean CRP (mg/dL), D-Dimer (mg/L) and Ferritin (mg/L) in mild cases were 6.7 (SD±3, 95% CI 5.5 to 7.3), 0.62 (SD±2, 95% CI 0.57 to 6.6) and 485 (SD±34, 95% CI 455 to 516), respectively. The mean RBS in moderate cases at the first consultation was 225 mg/dL (SD±32, 95% CI 196 to 259). The mean CRP (mg/dL), D-Dimer (mg/L) and Ferritin (mg/L) in moderate cases were 12.1 (SD±4, 95% CI 6.2 to 13.9), 1.3 (SD±2, 95% CI 0.9 to 1.7) and 655 (SD±42, 95% CI 588 to 691), respectively. There were 92 patients (21.2%) who were initiated on Premixed Analog insulin regimen to achieve glycemic control. Mild cases were managed by standard care approach for diabetes care, including oral drugs. 58 patients (63%) needed uptitration of insulin regimen as the RBS was over 300mg/dL, as a predefined threshold.

Discussion/Conclusion: We observed that the T2DM patients with higher grade of hyperglycemia had higher concentrations of prognostic biomarkers. This might have happened due to inflammatory reactions and related tissue destruction. COVID-19 vaccination program should also target those populations with higher RBS to improve their outcomes. We could not quantify the grade of insulin resistance and obesity that would have independently deteriorated the glycemic control with accelerated transition of mild to moderate COVID-19. Our study highlights the need to evaluate COVID-19 biomarkers guided by higher RBS and accordingly predict the progress of mild to moderate cases and timely intervene to manage these patients, while optimally utilising the resources for management of COVID-19.

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Abstract #1185166

Is hyperglycemia a risk factor associated with death in COVID patients everywhere in the world? Report from Honduras, Central America

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Objective: To determine if hyperglycemia at admission is a risk factor for death in diabetic and non-diabetic patients hospitalized for COVID 19 in patients in a third level hospital in Central America.

Methods: Descriptive cross sectional study that included patients hospitalized for COVID 19 during 2020 in Hospital Escuela,
Honduras. We revisited information for 1690 patients divided in three categories according to their glycemic values at admission. They were classified as ‘140 mg/dl category 1, 140–180 mg/dl category 2 and >180 mg/dl and category 3; we excluded 352 patients with no recorded glycemic value at admission.

Results: A total of 1357 patients were included, 644 for category 1 with 240 (37.3%) deaths out of which 58 (24.2%) were known for diabetes and 182 (75.8%) with no previous diabetes diagnosis. In category 2 out of 261 included patients there were 111 (42.5%) deaths with 40 (36.0%) and 71 (64.0%) previously known and not known for diabetes respectively. In category 3 out of 452 patients 194 (42.9%) deaths were confirmed with 142 (73.2%) in previously known for diabetes and 52 (26.8%) not previously known for diabetes.

Discussion/Conclusion: As reported previously in other parts of the world hyperglycemia proved to be a risk factor associated with death in patients known or not previously for diabetes. Even though it is not the only factor to be taken into consideration it has proven undoubtedly to be something that needs to be addressed upon admission for COVID 19 patients. A basal glucose measurement upon admission is fundamental in every patient and easily accessible even in underprivileged countries like ours. We found an ascending trend in increased mortality as glucose values at admission grow higher; this was true even for patients with no previous diabetes diagnosis. The registered mortality in this group of patients was about 35 to 47% higher compared to normoglycemic patients in the lowest glycemic tertile as has been found in previous publications. In the highest glycemic tertile (category 3) the mortality in diabetic patients found was 73% vs 26% in non-diabetics that presented with extreme hyperglycemia which also suggests that chronic hyperglycemia is an important determinant.

Hyperglycemia alters pulmonary function due to the non enzymatic glycosilation of proteins of the lung generating alveolar capillary microangiopathy causing the accumulation of collagen in the extra cellular matrix thus generating restriction lung disease.

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Abstract #1185180

Case of Maturity Onset Diabetes of Young-Type V

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Introduction: Maturity Onset Diabetes of Young (MODY) is a rare cause of diabetes and accounts for 1-5% of cases and has an autosomal dominant mode of inheritance. Diagnostic criteria set forth for MODY include 1. Onset before 25 years of age in one family member 2. Presence of DM in two consecutive generations 3. Absence of β-cell autoantibodies 4. Sustained endogenous insulin secretion.

Case Description: A male university student, aged 21 years, presented with uncontrolled DM. He was incidentally diagnosed with a case of T2D three years ago while undergoing pre-operative assessment for a right inguinal hernia repair and orchidopexy. He had a history of decreased shaving frequency (every 15 days) and no morning erections. There was a strong family history of DM, both from maternal and paternal sides.

He was obese with a BMI of 31.8 kg/m² and had normal vital signs. On genital examination, the right testicle was undescended, while the left was present in the scrotum with normal size and consistency. There was no evidence of gynaecomastia.

His first Hba1c from three years ago was 12.9% and subsequent levels were 6.4%, 10.0%, and 6.3%. C-peptide was normal (3.8 ng/ml), insulin level was also normal (13.0 mU/L), and a high HOMA-IR of 3.21. His LH and FSH were 5.82 mIU/ml and 2.06 mIU/ml respectively. Serial testosterone levels were checked; showed fluctuating levels between 260.0 - 479.0 ng/dL. TSH and prolactin were normal; he also had hyperuricemia (7.8mg/dl) and hypomagnesemia (1.5 mg/dl). Liver function tests revealed raised ALT (51 U/L) and GGT (91U/L). His semen analysis was done twice and showed severe asthenospermia. His right testis measured 2.2x1.1cm, was located in the right inguinal canal, while the left scrotal testis was 4.1x3.1 cm, on ultrasound. It also showed distended epididymis and vas deferens. CT scan abdomen revealed fatty liver, normal kidneys but absent body and tail of pancreas representing partial agenesis of the pancreas. Genetic testing could not be done due to resource constraints.

Lifestyle Modification was advised along with sitagliptin, metformin, and glimepiride. He was referred to a urologist for removal of undescended testis and biopsy of scrotal testis. Counseling was done for fertility issues.

Discussion: At diagnosis, MODY cannot be distinguished easily from T1D & T2D based on clinical characteristics alone. T1D mostly differs from MODY in terms of disease etiology, as the pathogenesis of MODY does not involve pancreatic β-cell autoimmunity. Patients usually maintain β-cell function, & their diabetes is well-controlled with no or low-dose insulin for at least 5 years after diagnosis, as in our case. To date, at least 14 different gene mutations are associated with MODY. Among them, HNF-1B (previously called MODY 5), is associated with developmental renal disease, especially cysts, genitourinary malformations, gout, and pancreatic insufficiency. Additionally, these patients can have elevated liver enzymes, hyperuricemia, and hypomagnesemia. On the basis of these features, a diagnosis of MODY 5 was made in our patient.

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Abstract #1185190

New Onset Autoimmune Diabetes Associated with Acute SARS-COV-2 Infection

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Introduction: Infection with SARS-CoV-2 has been shown to cause complications affecting nearly all organ systems of the human body. Here, we outline a case of SARS-COV-2 associated with new onset of autoimmune diabetes.

Case Description: A 62-year-old female with past medical history of class III obesity, primary hypothyroidism, obstructive sleep apnea, and endometrial cancer established care with a multidisciplinary bariatric team in March 2021. This team included a dietitian and psychologist to promote healthful lifestyle intervention with the intent to undergo bariatric surgery in December 2021. At a follow up visit in September 2021 her HbA1c was 6.7% (normal <5.7 %) and she was diagnosed with type 2 diabetes treated with healthful lifestyle. After lifestyle modification the patient