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Cornus Officinalis Promotes IGFBP2 and Autophagy in Human 1.1B4 Pancreatic Cell Line as Revealed by Employing a Global Proteomic Approach via Mass Spectrometry

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triggered by multiple aetiologies including hypertension, eclampsia, cytotoxic and immunosuppressant drugs and, rarely, hypercalcaemia.

Case Report
A 64 years old woman presented with five weeks history of fatigue, poor appetite, dry mouth, constipation and abdominal discomfort and one-week history of nausea and vomiting. She was hypertensive at 177/88 mmHg with dry mucous membranes. Physical examination and neurological examination were unremarkable.

Laboratory investigation showed corrected calcium of 4.83 mmol/L (2.5-2.54) with ionized calcium of 2.62 mmol/L (1.15-1.27), parathyroid hormone (PTH) of 1330 ng/l (15-68), phosphate of 1.16 mmol/L(0.8-1.5), magnesium of 0.51 mmol/L (0.7-1.0) urea of 10.7 mmol/L (2.8-8.4), creatinine of 119 umol/L (49-90), potassium 3.4 mmol/L(3.5-5.1). She was aggressively rehydrated, commenced on Intravenous (IV) frusemide and shown IV zoledradic acid. Cinacalcet was commenced and titrated gradually up according to corrected calcium level (target corrected calcium level between 2.5-3.0 mmol/L). Electrolytes deficiencies corrected with replacement therapy. Ultrasound neck and parathyroid MIIG scan showed large 5.1cm heterogeneous lesion posterior to the right lobe of the thyroid extending inferiorly into the superior mediastinum consistent with parathyroid mass. Histology confirmed benign parathyroid adenoma.

38 hours after admission, the patient became intermittently confused and complained of visual symptoms followed by complete visual loss in the left eye. This was followed shortly by status epilepticus which required treatment with intravenous antiepileptic therapy and mechanical ventilation. Corrected calcium at that time was 3.82 mmol/L. Patient was noted to have left upper limb weakness. Computed tomography of the brain was normal and magnetic resonance imaging (MRI) of the brain showed bilateral symmetrical subcortical T2 hyper-intensities in the occipital-parietal lobes consistent with PRES.

By day five, corrected calcium was 2.52 mmol/L. On day six patient had successful parathyroidectomy. Post operatively PTH was 7.73 ng/L and corrected calcium 2.27 mmol/L. Repeated Brain MRI showed resolution of symmetrical subcortical T2 hyperintensities within both occipital lobes. She made a complete neurological recovery. DEXA scan showed osteoporosis (T score in left forearm of -3.8). She was commenced on bisphosphonate therapy.

In conclusion, we demonstrated hypercalcemia-induced PRES. This can be a life-threatening condition and can be reversed by proper treatment of hypercalcemia.

Cardiovascular Endocrinology
PATHOPHYSIOLOGY OF CARDIOMETABOLIC DISEASE

Simvastatin Inhibits the Pro-Inflammatory and Pro-Atherogenic Effects of Cream in Obese Subjects
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SUN-560
Our previous work has shown that the ingestion of cream induces an increase in oxidative stress and other cellular and molecular indices of inflammation and atherosclerosis and that treatment with Vytorin for 6 weeks reduced and reversed majority of the effects of cream. However, it is not clear which component of Vytorin, simvastatin or ezetimibe, is responsible for these intriguing and potent effects. Therefore, we further investigated the effects of simvastatin treatment on indices of inflammation and atherosclerosis at baseline and following intake of dairy cream. Ten obese patients with LDL >100mg/dl were given simvastatin 40mg/day for 6 weeks. Subjects were asked to ingest 33ml of cream (about 300 Calories) containing about 85% saturated fat. Fasting and post-cream intake blood samples were obtained at baseline and at 6 weeks. Total cholesterol and LDLc concentrations were lowered significantly at 6 weeks following simvastatin (p<0.05). Cream intake at 0 week induced significant increases in MNC expression of IL-1 jailed (by 58±16%), TNF-alpha (by 79±19%), CD16 (by 103±32%), MMP-9 (by 68±17%), TLR-4 (by 68±12%) and TLR-2 (by 53±6%) over the baselines (p<0.05 for all). Cream intake at 0 week also induced a significant increase in IL-1beta plasma concentrations by 94±18% over the baseline. Simvastatin treatment suppressed fasting levels of CD68 expression in MNC (by 38±9, p<0.05) and fasting plasma levels of IL-1beta and MMP-9 expression in MNC following cream intake at end of simvastatin treatment was significantly suppressed (by 41±15%, 48±17%, 87±16% and 34±8%, respectively, p<0.05) compared to fasting levels at 0 week. The increase in IL-1beta, TNF-alpha, CD16 and MMP-9 expression in MNC following cream intake at end of simvastatin treatment was significantly suppressed (by 41±15%, 48±17%, 87±16% and 34±8%, respectively, p<0.05) compared to fasting levels following cream intake at 6 weeks. Simvastatin treatment also suppressed cream induced increases in plasma IL-1beta concentrations by 37±11% (p<0.05, compared to increases at 0 week). We conclude that simvastatin exerts a powerful anti-inflammatory effect and reduces expression of pro-inflammatory mediators induced by cream intake. This effect is similar in nature to that observed previously with Vytorin with some differences in the magnitude of the changes.

Diabetes Mellitus and Glucose Metabolism
ISLETS AND INSULIN SECRETION

Cornus Officinalis Promotes IGFBP2 and Autophagy in Human 1.1B4 Pancreatic Cell Line as Revealed by Employing a Global Proteomic Approach via Mass Spectrometry
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SUN-645
Type 1 diabetes (T1D) results in the loss of pancreatic beta cells and subsequent loss of insulin production. Exogenous
Reproductive Endocrinology

HYPERANDROGENISM

Metformin-Fish Oil Adjunct Therapy Improves apoB-Remnant Lipoprotein and Triglyceride Levels in Women with Polycystic Ovary Syndrome

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SUN-022

Background: Polycystic ovary syndrome (PCOS) is highly associated with the metabolic syndrome (MetS): obesity, insulin resistance and atherogenic dyslipidemia. Women with PCOS-MetS are at higher risk of developing ischemic cardiovascular disease (CVD) and Type-2 Diabetes. First-line intervention in PCOS-MetS includes targeting diet and lifestyle, and metformin is commonly prescribed to treat insulin resistance, however these interventions have shown limited effectiveness to improve dyslipidemia. At present there are limited safe and efficacious options to target atherogenic dyslipidemia in young women with PCOS. Fish oil (FO) and Icosapentyl ethyl supplementation have been shown to reduce fasting TG, apoB and to improve ischemic CVD outcomes. The efficacy of FO or as an adjunct therapy to metformin to improve ApoB-remnant lipemia in PCOS-MetS is unknown. The aim of this pilot study was to determine the effect of metformin, FO and FO-metformin combination treatment on fasting and non-fasting plasma TG and apoB-remnant lipoprotein metabolism in patients with PCOS-MetS.

Methods: Participants diagnosed with PCOS aged 18-30yrs received dietary counselling and were randomly assigned to receive FO (n=8), metformin (n=7) or FO-metformin (n=12) treatment for 12 wks. Plasma lipids (TG and cholesterol), ApoB48 and ApoB100 lipoprotein metabolism were assessed in the fasting and non-fasting state using a standardized high-fat meal test.

Results: At baseline, the fasting plasma TG, ApoB48 and ApoB100 was 238.0 ± 21.0 mg/dL, 9.00 ± 1.12 ug/ml and 290 ± 18.00 mg/dL. FO and FO-metformin decreased fasting plasma TG by 10% and 30% compared to the metformin treatment group (7%). Fasting ApoB48 was reduced 45%, 16% and 19% in FO-metformin, FO and metformin treatment groups, respectively. Non-fasting plasma TG and apoB48 lipoprotein area under the curve were reduced by 30% in the FO-metformin treatment group.

Conclusion: These pilot findings demonstrate FO-metformin adjunct therapy may have greater efficacy to improve atherogenic apoB-dyslipidemia compared to metformin or FO alone in high-risk patients with PCOS-MetS. A larger clinical trial is warranted to determine the long term effects of FO-metformin intervention on apoB-dyslipidemia and atherosclerotic cardiovascular disease indices.

Reproductive Endocrinology

MALE REPRODUCTIVE HEALTH - FROM HORMONES TO GAMETES

Changes in Metabolic Parameters After Administration of Novel Oral Androgens with Progestational Activity for 28 Days

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SAT-040

Background: While the metabolic effects of testosterone have been well studied, the effects of co-administration of an androgen and progesterin are less established. Two novel compounds being investigated for male hormonal contraception, dimethandroline undecanoate (DMAU)