MON-LB82

Introduction.: There is no effective and reliable biomarker to distinguish benign thyroid nodules (BTN) from papillary thyroid carcinomas (PTC). In this study we analyzed a set of four miRNA molecules in plasma of patients with papillary thyroid cancer, benign nodules and healthy controls to identify miRNA molecules that may be markers of PTC.**Aim.:** We aimed to investigate the dysregulation of plasma miRNAs in PTC and evaluate the diagnostic value for differentiation of PTC from BTN. **Methods.:** The expression levels of 4 miRNAs (miR-221, miR-222, miR-146b, miR-21) were measured in 48 PTC patients before thyroidectomy and again after thyroidectomy in a subgroup of 36 patients. Preoperative and postoperative plasma miRNA expression levels were compared with baseline levels established in plasma from the heathy controls group (N=57) and patients with BTN (N=22). MicroRNA-222 and miR-146b, miR-221, miR-21 were included in a panel because they all reportedly were overexpressed in PTC compared to benign nodules or normal thyroid tissue.**Results.:** Compared with baseline levels in the healthy controls group, miR-221, miR-222, miR-146b, miR-21 levels were significantly higher in the preoperative PTC group (P <0.0001, P=0.002, P=0.028, P =0.021, respectively). A significant reduction in miR-21 expression was observed in postoperative PTC patients. MiR-21 decreased by 5.98-fold (P=0.046) in post- operative samples compared with preoperative samples in the PTC patients. In comparison MiRNRs expression levels in BTN group with healthy controls, miR-221, miR-21 expression levels were significantly higher in the BTN group (P=0.003, P=0.048, respectively). No significant difference was observed between the preoperative PTC group and the preoperative BTN group with regard to the expression of these four miRNA's. **Conclusions:** The expression levels of miR-222, miR-146b in plasma were significantly higher in patients who had PTC than in healthy volunteers, whereas levels of miR-221, miR-21 in plasma were significantly higher in patients who had either PTC or BTN before thyroidectomy than in healthy volunteers. Furthermore, miR-21 showed a significant reduction of expression levels after thyroidectomy in PTC patients. However, value of these four miRNAs is still limited in differential diagnosis of PTC and benign nodules.

Adipose Tissue, Appetite, and Obesity

ADIPOSE TISSUE BIOLOGY AND OBESITY

Metabolic and Brown Adipose Tissue-Specific Effects of the Novel Non-Steroidal Mineralocorticoid Receptor Antagonist Finerenone in a Mouse Model of Diet-Induced Obesity

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SAT-LB106

In this work we studied the metabolic effects of the novel non-steroidal MR antagonist Finerenone (FIN) in mice fed a high-fat diet (HFD, 60% kcal as fat). We also investigated the signaling pathways underlying the beneficial metabolic effects of MR antagonism. After 3 months of HFD, mice treated with FIN showed an improvement of glucose tolerance compared to control mice as shown by intraperitoneal glucose tolerance tests. Despite this metabolic improvement, FIN-treated mice did not show a reduction in body weight compared to control mice. In order to elucidate the favourable effect of FIN on glucose tolerance we performed histological and molecular analyses at level of different adipose depots. We did not observe significant differences in classical white adipose depots (subcutaneous and visceral) between control and FIN-treated mice. Interestingly, interscapular brown adipose tissue (iBAT) of FIN-treated mice showed an increased multilocularity and a reduced size of lipid droplets, suggesting an iBAT-specific effect of FIN. We than analyzed mRNA and protein expression of uncoupling protein 1 (UCP-1) and peroxisome proliferator-activated receptor-gamma coactivator 1 alpha (PCG1-alpha), showing a significant increase of both markers at iBAT level in FIN-treated mice. Furthermore, leptin and adenylate cyclase 5 (Adyc5) (specific white adipose tissue markers) mRNA expression was reduced at level of iBAT in FIN-treated mice. Finally, we demonstrated that FIN-induced MR antagonism determined an increased activation of AMP-activated protein kinase (AMPK) which, in turn, stimulated adipose triglyceride lipase (ATGL) activity, with subsequent up-regulation of genes involved in fatty acids oxidation, tricarboxylic acid cycle and thermogenesis, in iBAT. In summary, our study shows that FIN protects from iBAT dysfunction and improves glucose tolerance in HFD-fed mice. Importantly, FIN effects on iBAT are mediated by a MR-AMPK-ATGL-UCP-1 signaling cascade. Therefore, MR antagonism by FIN in clinical settings might offer metabolic advantages, on top of its anti-fibrotic action, in multi-morbid cardiorenal patients.

Diabetes Mellitus and Glucose Metabolism

METABOLIC INTERACTIONS IN DIABETES

Real-World Safety and Effectiveness of Insulin Glargine 300 U/ML (Gla-300) in People With Type 2 Diabetes Who Fast During Ramadan

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SUN-LB126

ORION was a prospective, observational study evaluating the safety and effectiveness of the second-generation basal insulin analog Gla-300 in people with type 2 diabetes (T2DM) who fast during Ramadan. Adults with T2DM who intended to fast for ≥15 days during Ramadan, had taken