

In conclusion, our data confirm the previously described prevalence of CAH-X. Beighton-score seems to be a quick and cheap screening instrument for CAH-X and should be performed in all patients with classic CAH, since protein level in serum cannot be used for screening for CAH-X-Syndrome. A stronger focus needs to be made on back pain and foot malposition as symptoms of CAH-X and echocardiography should be performed in all CAH-X patients. Therapy should depend on clinical symptoms in patients.

Diabetes Mellitus and Glucose Metabolism

CLINICAL STUDIES IN OBESITY, DIABETES RISK, AND CARDIOVASCULAR OUTCOMES

Framingham Cardiovascular Disease 10-Year-Risk Score Is Associated with Myocardial Perfusion in Asymptomatic Diabetic Patients

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Framingham Cardiovascular Disease 10-year-risk Score is associated with Myocardial Perfusion in Asymptomatic Diabetic Patients

Background: Even without atherosclerosis, diabetes increases the risk of death from coronary heart disease and heart failure. Myocardial perfusion dysfunction may occur in the early stage of diabetic cardiomyopathy, but its examination method is relatively complex. It is very important to carry out targeted cardiac screening to find the factors related to diabetic myocardial perfusion in the early stage.

Methods: We enrolled 77 patients with diabetes and 30 controls, performed anthropometric and laboratory tests such as blood glucose and lipids, and calculated Framingham Cardiovascular Disease 10-year-risk Score (FRS). All participants underwent cardiac magnetic resonance examinations and recorded their cardiac structure, functional indicators (such as ejection fraction (EF), end-diastolic volume (EDV), end-systolic volume (ESV), stroke volume (SV), peak filling rate (PFR), myocardial perfusion index (maximum upslope (Slope), half time to maximum signal intensity (Time50Max (s)), time to maximum signal intensity (TimeMax (s)), the maximum signal intensity (MaxSI), basic signal intensity (Baseline), the ratio of MaxSI and Baseline ((MaxSI (BL) %), the difference value between MaxSI and Baseline (MaxSI (BL))).

Results: Compared with normal group, no cardiovascular symptoms of left ventricular and right ventricular systolic function in patients with diabetes and end-diastolic and end systolic volume had no obvious difference, left ventricular PFR is lower than normal (279.65 + 57.62 vs. 322.57 + / - 78.29, $p = 0.02$), in the subgroup analysis we found that the FRS high-risk groups, ventricular septal thickening tend to, and Slope, MaxSI, MaxSI BL (%), MaxSI (BL) were significantly lower than the high risk group, Time50Max and TimeMax were significantly longer than the non-high-risk group, and FRS was negatively correlated with Slope, MaxSI(%BL) and positively correlated with TimeMax(s) and Time50Max(s), with statistical significance.

Conclusion: Systolic function remains and diastolic function decreases in asymptomatic diabetic patients. Moreover, the patients with high risk of FRS had significant decreased perfusion function, and the quantitative indexes of perfusion function were closely related to FRS. It is of great

value to pay attention to the changes of FRS score for early screening and diagnosis of diabetic heart disease.

Reproductive Endocrinology

FEMALE REPRODUCTION: BASIC MECHANISMS

Estradiol Triggering Extracellular Matrix Degradation Leading Signalling Cascades Succeeding a Feedback Loop as Contributing Factor to Develop Endometriosis in Females of Reproductive Age

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INTRODUCTION: Endometriosis is common gynaecological disorder that leads to infertility in females of reproductive age. It is characterized by endometrial glands and stromal tissues outside the wall of uterus. Upregulation of estradiol is responsible for the cell proliferation, adhesion and invasion in endometriosis. It enhances prostaglandins (PGE-2) that triggers the formation of matrix metalloproteinases (MMPs), Tumor necrosis factor- α (TNF- α) and nuclear factor kappa B (NF- κ B). Whereas, levels of progesterone are reported to be decreased in the patients with endometriosis. Less production of progesterone activity of 17 β -hydroxysteroid dehydrogenase-II (17 β -HSD-II) decreases that converts estradiol to less potent estrone. Intake of excess trans-fats and deficiency of vitamin D raises level of arachidonic acid and converts PGE-2 by the action cyclooxygenase (COX-2). PGE2 in theca cells of ovaries increases cAMP and activity of liver receptor homologue-1/steroidogenic factor-1 (LRH-1/SF-1) thus leading to the stimulation of aromatase enzyme. **MATERIALS AND METHODS:** Two hundred eighty-eight (n=288) females with endometriosis and hundred (n=100) controls were enrolled. Informed consent was obtained before the collection of samples. Levels of estradiol, progesterone, aromatase enzymes, 17 β -HSD-II, COX-2, PGE-2, MMPs (2, 7, 9), vitamin D and lipopolysaccharides (LPO) were estimated by respective protocols. **RESULTS:** Findings suggests significant increase in the levels of estradiol, aromatase enzymes, COX-2, PGE-2, MMPs (2,7,9) and LPO (67.08 \pm 5.55 pg/ml, 7.16 \pm 1.28 ng/ml, 1.56 \pm 0.144 ng/ml, 4.89 \pm 0.61 pg/ml, 995.2 \pm 8.15 ng/ml, 105.2 \pm 7.19 ng/ml, 109.2 \pm 12.25 ng/ml and 125.25 \pm 11.26 pg/ml) in patients as compared to (21.08 \pm 3.65 pg/ml, 2.08 \pm 0.15 ng/ml, 0.61 \pm 0.056 ng/ml, 1.158 \pm 0.18 pg/ml, 388.26 \pm 14.26 ng/ml, 66.29 \pm 5.26 ng/ml, 38.29 \pm 15.2 ng/ml and 17.25 \pm 1.26 pg/ml) controls respectively. Whereas, levels of progesterone, 17 β -HSD-II and vitamin D remained significantly low in the endometrial patients (3.07 \pm 1.08 ng/ml, 0.183 \pm 0.024 ng/ml and 17.17 \pm 2.3 ng/ml) as compared to healthy females (29.22 \pm 3.29 ng/ml, 1.43 \pm 0.153 ng/ml and 36.26 \pm 3.09 ng/ml). **CONCLUSION:** Current study suggests the role of estradiol in triggering ECM degradation and initiating signalling cascades that following a feedback loop enhances the levels of estradiol and contributes in the development and progression of endometriosis. Hence, therapies with supplementation of vitamin D and progesterone may help in regressing the role estradiol and other contributing factors that are involved in the development and progression of endometriosis in the patients. **Keyword:** Endometrial glands, Stromal tissues, Estrogen, Progesterone, Endometriosis, Vitamin D