Laser Doppler fluorometry (LDF) is not an invasive method for diagnosing microcirculation in patients with diabetes mellitus, but the method needs to be improved. Evaluation of the LDF method in patients with diabetic neuropathy (DN) before and after the appointment of vitamin D (VD). Included patients with DM and VD deficiency, DM duration more than 5 years, HbA1c up to 9.0%, non-smokers, signed IC. LAKK-M was used. The value of perfusion was measured – M, σ – average modulation of blood flow and CV – coefficient of variation, two functional tests (postural and occlusive). Patients without changing hypoglycemic treatments were randomized into three groups: 5000 IU (group I) and 40 000 IU (group II) per week cholecalciferol treatment and control group (group III). The duration of observation is 24 weeks. Group I included 12 patients (6F) at the age of 56.1 (±5.4) with an average HbA1c of 8.17±0.36% and vitamin 25 (OH) D 21.4±3.4 nmol/l. Group II included 12 patients (6F), the mean age was 51.3 (±5.9), HbA1c 8.35±0.63%, 25 (OH) D 20.9±4.1 nmol/l. Group III included 14 patients (7F) HbA1c 7.32±0.19% and 25 (OH) D 27.1±1.9 nmol/l. The initial parameters of microcirculation did not differ in the three groups (data given in I-II-III groups): M=10.63±1.37, 12.36 (±2.51), 12.36 (±1.92), σ=5.32±0.79, 4.44±1, 05, 7.1±0.38, Kv =11.36±1.59, 10.64±2.93, 15.44±2.49. After 24 weeks HD we found no changes in group I – HbA1c 8.06±0.39%, 25 (OH) D 24.68 (P=0.07), M=10.30±1.14 (P=0.08), σ=6.05±0.93 (P=0.005) and Kv =11.82±2.38 (P=0.87). Significant differences were found in group II: HbA1c decreased to 7.42±0.73% (P=0.023), 25 (OH) D increased to 60.88 (P=0.003); All parameters were improved microcirculation M=19.69±2.52 (P=0.003), σ=6.05±0.93 (P=0.005), Kv =13.36±3.15 (P=0.017). The indices of group III did not change statistically significant (P=0.46). The LDF method for the diagnosis of changes in microcirculation DN was informative in conjunction with functional tests. diabetes mellitus; laser dopplerography; Vitamin D
CONCLUSION: The laser Doppler method is helpful to identify patients with risk development diabetic complications. The most valuable data is MAX, TM and TH, the best localisation of the probe seems to be the most distal point of thumb. Authors: M Jasik; A Liebert; J Juskowa; W Karnafel; R Maniewski. Publication Detail: Type: Clinical Trial; Controlled Clinical Trial; English Abstract; Journal Article. Journal Detail: Title: Polskie Archiwum
The blood microcirculation of the pancreas in rats with diabetes was studied using Laser Speckle Contrast Imaging (LSCI). The impact on blood flow of x-ray contrast “OmnipaqueTM-300” (n = 1.438) and aqueous solution of “OmnipaqueTM-300” (n = 1.407) used as optical clearing agents (OCAs) was also investigated. The alloxan induced animal model of diabetes was exploited. The results obtained in the study of blood microcirculation disorders of pancreas in diabetes and under topical application of optical clearing agents show that disease development in animals causes changes in the microcirculator...