Conclusions: Thus, the deprivation of the visual analyzer at late stages of grave diseases is a body's compensatory reaction aimed at economizing the reserves for man's survival. Attempts to restore eyesight in this particular situation are unpromising.

Key words: visual analyzer, compensatory reaction, ergonomics.

DETECTION OF LATE COMPLICATIONS OF THE PERMANENT VASCULAR ACCESS IN HEMODIALYSED PATIENTS USING ULTRASOUND AND IMAGING METHODS. PILOT STUDY

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Introduction: The strategic direction to increase the lifetime of the PVA is to ensure proper function for the existing PVA maximally possible by early diagnosis of potential complications assessing the vascular diameter, hemodynamic characteristics of PVA and vascular status of existing reserves using DU and CT angiography with 3D reconstruction.

Aim: Detection of late complications of the permanent (P) vascular access (VA) in hemodialysed patients using Dupplex ultrasound (DU) and CT angiography with 3D reconstruction.

Material and methods: between 2006 and 2012 – 82 patients were enrolled in the study with end-stage chronic renal failure who underwent iterative hemodialysis (HD) in various Hemodialysis departments: IMPSP CNŞPMU, IMSP SCR, IMSP SCM №3 „Sfântă Treime", IMSP SR Comrat, IMSP SR Cahul, IMSP SM Bălți, ICŞDOSMC. The mean age was 49.62±1.48 (27-72) years; the male/female ratio was 42/40. The mean duration of treatment with iterative HD was 5.61±0.52 (0.2-16) years. DU was performed with the device „Vivid S6", General Eectrics, Medical Systems. Qualitative and quantitative parameters of blood flow in arterio-venous fistula (AVF), vascular resistance index and pulsatility index were evaluated. In 7 (8.5%) patients, because of considerable difficulties in interpretation of results by DU, CT angiography with 3D reconstruction was performed using Siemens Emotion 16 (Germany) with Ultravist solution – 150 ml i/v.

Results: in case of AVF stenosis the blood flow determined by DU was turbulent and collateral, decreased to 500-600 ml/min; in cases of aneurysms – it was 2500-5000 ml/min. 3D-CT angiography allowed visualization of the full trajectory of AVF, including arterio-venous anastomosis, permeability/obstruction of central vein, the degree and extension of the stenosis. In 3 cases the diagnosis of central vein stenosis was confirmed. In one case of multiple aneurysms of AVF the full path of the VA was viewed, including the arterio-venous anastomosis with multiple aneurysmal dilatation (n=3). In 3 patients the depletion of upper limbs vascular reserves was found. Late complications of VA were diagnosed in 44 patients (53.6%). In 24 (29.2%) patients the depletion of vascular reserves were established. The complications pattern: AVF thrombosis – 29.5% (n=13), AVF stenosis – 36.4% (n=16), aneurysm – 29.5% (n=13), blood steal syndrome – 2.3% (n=1), carpal tunnel syndrome – 2.3% (n=1).

Conclusions: DU of upper limb vessels is the method of choice in studying hemodynamic parameters of AVF. CT angiography provides significant advantages compared to DU in determining the degree and extent of stenosis, in assessing the state of the vascular system of the upper limbs and of central veins, and also in determining the vascular reserves of the patient in order to choose the optimal method of correction of complications.