Vascular damage, retinal ischemia and hypoxia are known to be accompanied by a complex mechanisms characterized by vascular growth factors and inflammatory cytokines production. Purpose: To measure aqueous humor cytokines and to determine the association of their levels with particular retinal pathology and disease activity. Methods: Aqueous humor samples were collected from 39 patients who underwent intravitreal ranibizumab treatment: 4 patients had wet AMD, 10 – retinal vein occlusion (RVO), 5 – myopic choroidal neovascularization, 12 – diabetic macular edema (DME), 6 – proliferative diabetic retinopathy (PDR) with active retinal neovascularization, 2 – neovascular glaucoma (NVG). Interleukin (IL) -6, -8, vascular endothelial growth factor (VEGF) and monocyte chemoattractant protein-1 (MCP-1) were quantitatively detected by enzyme-linked immunoassay. Results: VEGF and MCP-1 levels were increased in all patients:20.2-1394 pg/ml and 433-3152 pg/ml compared to control, respectively (p<0.05). High concentrations of VEGF (261-1297 pg/ml) and MCP-1 (493-1529 pg/ml) were found in patients with PDR, RVO and 2 patients with DME. Other 2 patients with DME, patients with mCNV and wet AMD had moderately increased levels of both VEGF and MCP-1. The highest concentrations of VEGF (1394 pg/ml), MCP-1 (3152 pg/ml) and IL-6 (4680 pg/ml) were detected in 2 patients with NVG. IL-8 levels did not reach test sensitivity. Cytokine levels were significantly (p<0.05) higher in patients with severe compared to moderate disease activity. Conclusions: IL-6, VEGF and MCP-1 levels were found to be increased in a number of vascular and neovascular retinal pathologies with the extent of increase depending on the type of pathology and disease activity.