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Platelet serotonin level and polymorphisms of serotonin transporter gene in patients with sjogren's syndrome: Association with depression and fatigue

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Abstract

Platelet serotonin level (PSL) is decreased in all examined inflammatory rheumatic disorders. The main goal of this study was to examine platelet serotonin level and two main polymorphisms of serotonin transporter gene, and to determine their potential association their interrelation and effects on depression and fatigue in patients with pSS. In this, study, a possible association of 5-HTTLPR and 5-HTTin2VNTR polymorphisms of the 5-HT transporter gene with PSL, depression and fatigue was investigated in a sample od 61 patients with pSS and 100 healthy controls. Clear difference between pSS patients and controls was found with PSL values being significantly lower in patient groups. „Low expressing“ genotype s/s on 5-HTTin2VNTR polymorphysm significantly reduced PSL in patients group, not in controls, indicating strong effect of ss genotype of 5-HTTin2VNTR polymorphism on PSL in patients with pSS. Our findings also have demonstrated that depression and fatigue are influenced by PSL, suggesting that PSL could be used as biomarker of depression and fatigue in patients with pSS. The results support a biopsychosocial model od pSS in which 5-HTT genotypes modifies risk for depression and fatigue. Long term, practitioners may individualize treatment of pSS patients with depression and fatigue using PSL and 5-HTT genotype as two valuable factors. The current study demonstrated that signal hyperintensities on brain MRI are more common in specific brain regions of pSS patients with frequents episodic tension type headache (FETTH) than in age-matched controls with FETTH, indicating more widespread cerebral vasculopathy in Sjogren's group. Brain MRI represents a sensitive screening tool for detection of SH in pSS patients with FETTH. Association between PSL and periventricular lesions in this study is in line with hypothesis of interrelation between increased platelet serotonin release and pathophysiology of brain tissue damage in specific region of the brain in pSS patient with FETTH.

Biography

Helena Sarac was born 1968 in Šibenik, Croatia. She earned her medical degree and PhD at Medical School University of Zagreb, and did residencies and fellowship work at Medical School University of Zagreb and Croatian Institute for Brain Research, Zagreb. Since 1999 she was managing director of the Diagnostic Centre Neuron affiliated to the Croatian Institute for Brain Research, Zagreb, Croatia, where she encountered extraordinary group of Sjogren'sy patients exhibiting neurological manifestations. Area of her speciality is neuroimmunology. She is investigating serotonergic neurotransmission, neurohumoral dysregulations and neuropsychiatric disturbances in patients with Sjogren's syndrome. Her work is published recently in respectable journals od immunology; Journal of Neuroimmunology in 2012 and The Journal of Rheumatology 2013.