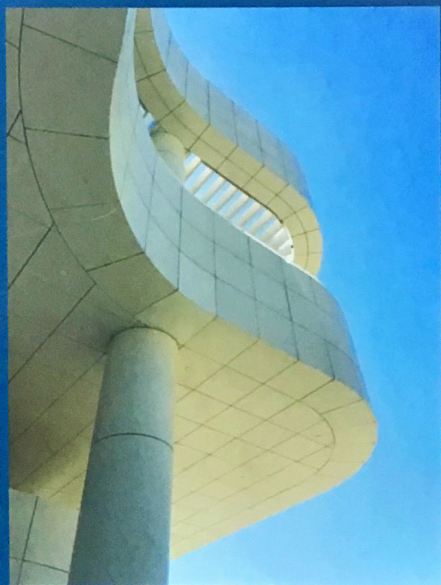
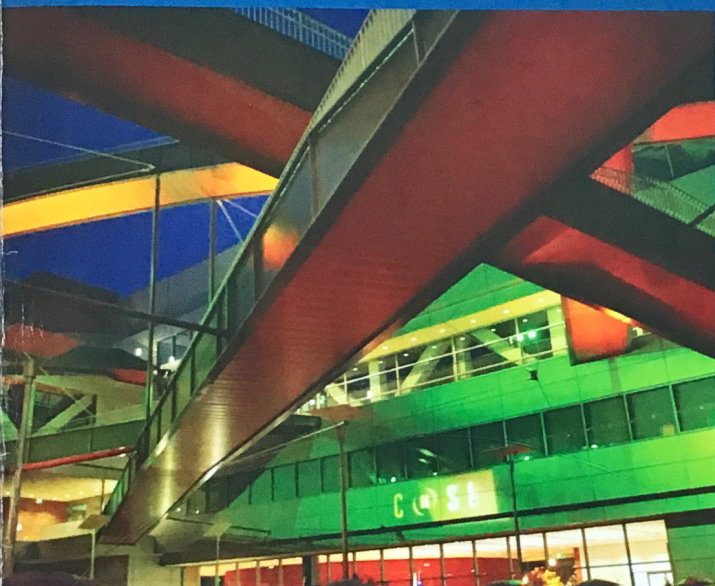


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EXAMINATION OF PACAP IN BLOOD SAMPLES OF PATIENTS WITH PARKINSON'S DISEASE

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In the last few years, numerous studies examined the presence and the changes of PACAP level in different human samples to show alterations in various physiological and pathological conditions. A recent study showed that plasma PACAP concentrations were significantly higher after acute spontaneous basal ganglia hemorrhage than in healthy controls. We found correlation between mortality and PACAP levels in severe traumatic brain injury. Han and coworkers demonstrated that PACAP levels were reduced postmortem in several brain areas and in the cerebrospinal fluid of Alzheimer's disease patients.

The aim of the present study was to examine the PACAP in blood samples of patients with Parkinson's disease. We examined patients from different stages of Parkinson's disease based on the Hoehn-Yahr scale without treatment, with different levodopa treatments and after deep brain stimulation. Sandwich-type ELISA (Mybiosource) was used to measure the PACAP38 level of plasma samples.

Our results showed elevated PACAP38 levels in plasma samples from patients with PD after deep brain stimulation. We found significantly decreased plasma levels in patients over 50 years and in stage 3 based on the Hoehn-Yahr scale. Our results did not find significant correlations between plasma PACAP38 level and MDS UPDRS Score or the type of pharmacological treatment of parkinsonian patients.

These results are similar to earlier experiments where elevated PACAP levels were found after basal ganglia or subarachnoid hemorrhage, after traumatic brain injury, in migraine and posttraumatic stress disorder. The neuroprotective and cytoprotective effects of PACAP are well known, therefore, the role of elevated endogenous PACAP levels in these conditions could provide its protective function to restore the physiological conditions. Our further aim is to increase the number of examined patients to identify the prognostic and/or diagnostic biomarker value of PACAP38 in case of Parkinson's disease.

EXAMINATION OF PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE (PACAP) AND LEUKOCYTE ANTISEDIMENTATION RATE (LAR) IN POLYTRAUMA VICTIMS

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Severe trauma is the most frequent cause of death in people below the age of 40 years. Associated tissue injuries result in cellular necrosis, leukocyte activation, consequent swelling and immunoreactions triggering further reactions and consequent organ failures in the host. New monitoring methods could be the leukocyte antisedimentation rate (LAR) or the changes in pituitary adenylate cyclase-activated polypeptide (PACAP) levels.

Our aim was to examine the characteristics of non-conventional markers (PACAP38, LAR) in polytrauma victims and their correlation to conventional laboratory parameters (serum C-reactive protein (CRP), procalcitonin(PCT)) used in the daily intensive care.

Thirteen patients were followed for 5 days (D1-D5) after admission to a critical care unit with severe polytrauma (Injury Severity Score²¹⁶).