Methods: High-resolution spectral domain OCT was used to image 25 patients with PD and 25 healthy controls. RT and macular RNFL thickness and ON parameters were measured using automated software. Retinal layers segmentation analysis was performed with ImageJ.
Results: Macular segmentation analysis showed thinner retinal nerve fibre layer (RNFL) in temporal ($p = 0.015$) and central ($p = 0.02$) areas; outer nuclear layer (ONL) – in all analysed areas ($p < 0.001$ for all) and retinal pigment epithelium (RPE) – in nasal ($p = 0.001$) area and centrally ($p = 0.04$). Maximal optic nerve cup depth was statistically larger in PD patients with associated peripapillary RNFL thinning in all segments.
Conclusion: Our study confirms previous histological and electrophyiological findings of abnormal retina in PD. We demonstrated significant thinning of the RNFL, ONL and RPE in patients with PD. RPE thinning could be related to dopamine deficiency. We also describe for the first time optic nerve abnormalities in PD. In addition, we describe for the first time changes of the optic nerve. The macular structure in PD patients indicated the most significant difference between the eyes on the side with less severe neurological deficit and healthy controls.

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Movement Disorders 2
The clinical utility of [123i]-FP–CIT SPECT in tremor type versus non-tremor type clinically uncertain Parkinsonian syndrome

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Background: [^{123}I]-FP–CIT SPECT has been approved to differentiate essential tremor from tremor due to Parkinsonian syndromes. Although off-label use is not uncommon, the utility of [^{123}I]-FP–CIT-SPECT in non-tremor type Clinically Uncertain Parkinsonian Syndrome (CUPS) has not been well established.
Objectives: To assess if the use of [^{123}I]-FP–CIT-SPECT would lead to changes in clinical management and diagnosis in patients presenting with tremor type versus non-tremor type CUPS.
Patients and methods: We retrospectively reviewed clinical records of all patients with [^{123}I]-FP–CIT-SPECT obtained at our institution between January, 2012 and March, 2014. The study was approved by the local institutional review board.
Results: Thirty-eight consecutive patients with [^{123}I]-FP–CIT-SPECT images were analyzed. Prior to the [^{123}I]-FP–CIT-SPECT scans, 27 were classified as CUPS, and 11 as a clinically certain Parkinsonian syndrome (CCPS) including Parkinson's disease (n = 8), progressive supranuclear palsy (n = 2) and multiple system atrophy (n = 1). Ten (91%) of the 11 CCPS patients and 15 (56%) of the 27 CUPS patients had abnormal [^{123}I]-FP–CIT-SPECT indicating presynaptic dopaminergic deficiency ($X^2 = 4.34$, p = 0.04). Of the 27 CUPS patients, 13 presented with a tremor syndrome (54% with abnormal scan), and the remaining 14 patients presented with a non-tremor syndrome (57% with abnormal scan) ($X^2 = 0.03$; p = NS). A change of diagnosis or management followed in 85% of tremor type CUPS and in 93% in non-tremor type CUPS patients.
Conclusions: This study suggests that [^{123}I]-FP–CIT-SPECT may contribute to changes in clinical management and diagnosis in both tremor type and non-tremor type CUPS.

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Movement Disorders 2
Cognitive assessment in multiple system atrophy cerebellar type

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Background: Multiple system atrophy (MSA) type C is a rare, sporadic, progressive, neurodegenerative disease. Oligodendrocyte cytoplasmic inclusions of fibrillized alpha-synuclein represent the hallmark of the disease. Dementia is considered an exclusion criteria, but MMSE is abnormal in 26% of the patients. Executive dysfunction is the most common presentation, but memory or visual spatial functions may also be impaired.
Objective: To assess multiple, domain-specific cognitive functions in patients with the cerebellar type of MSA (MSA-C) and to compare them with normal controls and Parkinson's disease (PD) patients.
Patients and methods: We included patients with probable MSA-C, PD and normal controls, matched by age, sex and scholarity. We performed the following tests: The Montreal Cognitive assessment (global assessment); Naming Nouns and Pointing (language); Raven Colored Progressive Matrices (fluid intelligence); Symbol Digit Modalities Test, Trail Making Test, Phonetic and Semantic Fluencies (executive functions); Digit Span, Modified 10/36 Special Recall Test, Rey Auditory Verbal Learning Test (memory); Segment Length Discrimination, Mental Rotation (Visuospatial functions).
Results: We enrolled 20 MSA-C, 20 PD patients, and 20 normal controls (age, sex and scholarity matched). The most frequent finding in MSA-C patients was an impairment of the executive functions, followed by attention and memory and visuospatial impairment. The impairment of the executive functions was more severe in MSA-C than in PD patients.
Conclusions: Global cognitive impairment is uncommon in MSA-C but executive functions are frequently impaired.

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Movement Disorders 2
Clinical presentation and genetic characteristics of Huntington's chorea in Croatia

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Bacground: Clinical presentation, genetic characteristics and disease evolution of patients with Huntington's chorea (HC) from Croatia, constituted from Slavic population, is still unknown, since most data are in the form of case reports.
Objetive: To report our experience over 30 years with patients with HC in Croatia
Patients and methods: The clinical records of ninety-five patients with HC were reviewed. Data were collected for periods of 30 years (14 years prior and 16 after the introduction of genetic testing for HC).
Results: The mean age at the disease onset was 36.5 (11.7) years. Adult onset HC was the most common while juvenile HC was observed in only 7% of patients. Chorea was the most common presenting symptom (69%) and 20% of these patients were characterized as spinal pathology at the beginning of the disease. Psychiatric disturbances as presenting symptoms (depression, psychosis) were present in 31% of patients. Juvenile patients presented as rigid type, vocal tics and myoclonus. The mean number of CAG repeats was 45.9 (range: 33–69

repeats). The mutation length was longer in paternally (mean = 47.9 CAG units) than in maternally (mean = 41.3 CAG units) transmitted HC patients ($p < 0.05$). A significant inverse correlation was observed between repeat size and age at onset. There was no association between the CAG repeat length and a particular clinical presentation at onset.

Conclusion: Regarding the age at onset, genetic characteristics and clinical features during the course of the disease, patients in Croatia did not differ from the Western European population.

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Movement Disorders 2
Opsoclonus-myoclonus syndrome associated with herpes simplex encephalitis

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Background: Opsoclonus-myoclonus ataxia is a rare neurologic syndrome, often paraneoplastic in origin, but reported in association with various infections. Little is known about adult-onset opsoclonus-myoclonus syndrome (OMS) outside of individual case reports

Objective: Describe a case of herpes-simplex virus 1 encephalitis presenting as opsoclonus-myoclonus ataxia

Patients and methods: A 35 year-old woman, with no known comorbidities, developed a headache with nausea and vomiting, without fever or nuchal rigidity. In the following 48-hours, she presented an altered mental status, opsoclonus and myoclonus and was admitted to hospital. Lumbar puncture: 40 cells (60% mononuclear), protein 140 mg/dL and a normal glucose. Gram stain and culture for bacteria and fungi were negative. A PCR for herpes-simplex virus was positive. Brain MRI: normal. Chest, Abdomen and Pelvis CT: no signs of neoplasia.

Results: The patient received intra-venous acyclovir for 21 days, with resolution of symptoms

Conclusion: OMS is an uncommon presentation of infections of central nervous system. Its fame extends further to the fact that OMS can be a harbinger of occult malignancy. The Adult-onset presentation is rare. Paraneoplastic and parainfectious causes (particularly virus) are common; however, more often OMS in adults occurs after systemic infection. After this report, HSV1 infection should be considered in OMS cases. We described the first case of OMS secondary to Herpes-Simplex Virus 1 infection.

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