



News on the journal *Neurological Sciences* in 2017

Ilaria Di Donato¹ · Antonio Federico¹

Published online: 11 January 2018
© Springer-Verlag Italia S.r.l., part of Springer Nature 2018

As usually, we report in this survey the main advances in neurology and neurosciences, as reported in the articles published in *Neurological Sciences* in the 2017 volume and related to all the main topics of neurology.

Cerebrovascular diseases remain among the dominant topics for neurological research and practice. A growing interest is addressed to pathophysiology of stroke [1], and especially toward genetic causes [2–4]. Early rehabilitation is linked to a better recovery and more positive outcomes [5, 6]. Infections, aneurysms, dissections, venous thrombosis, and autoimmune diseases are rarer cause of stroke which may be underconsidered in the final diagnosis [7–11]. It has been established that standardization of stroke assessment and organization of stroke networks could be able to reduce mortality and dependency in stroke patients [12]. Intravenous thrombolysis remains the standard treatment for acute ischemic stroke within 4.5 h of symptom onset. Extra-ischemic brain hemorrhages after thrombolysis for ischemic stroke occur in less than 3% of treated patients, but they worsen prognosis [13] and the administration of thrombolytic therapy in elderly patients with dementia and acute ischemic stroke is still controversial [14].

Multiple sclerosis (MS) is another very common topic. Since it usually occurs in young adults with a female prevalence and obvious difficulty management during pregnancy and puerperium, the collaboration between neurologists, gynecologists, and psychologists for an interdisciplinary approach has been reported [15]. Conventional magnetic resonance imaging (MRI) remains a fundamental tool to diagnose and monitor MS and advanced MRI techniques are improving the understanding of the mechanisms underlying tissue injury, repair, and functional adaptation in MS [16].

Pharmacological development for MS is growing up in the last years. Rescue therapy with alemtuzumab in multiple sclerosis post-natalizumab puerperium reactivation has shown high efficacy [17]. Safety and tolerability of fingolimod has been better understood [18, 19]. Therapeutic potential of curcumin is a matter of debate [20]. Tetrahydrocannabinol-cannabidiol (THC/CBD) oromucosal spray has shown to be effective in improving overactive bladder symptoms in MS patients demonstrating a favorable impact on detrusor overactivity [21], and treatment with botulinum toxin type A (BoNT-A) for MS-related spasticity has beneficial effects but also high level of discontinuation [22]. Myeloablative autologous hematopoietic stem cell transplant (AH SCT) has proven to be safe and efficacious to control the aggressive forms of MS with better outcome in RR-MS [23].

Alzheimer's disease (AD) is the main cause of dementia, but rarer alternative diagnosis such as Creutzfeldt-Jakob disease and Whipple disease has to be considered [24, 25]. Also, dementia with Lewy body (LBD) is often misdiagnosed as AD [26, 27]. Association of arterial stiffness with cognition impairment in patients with Lewy body disorder has been evaluated and compared with AD findings [28].

Benzodiazepines (BZD) and cognitive impairment represent an interesting aspect of research, since patients with high-dose BZD intake show profound changes in cognitive function [29]. Several articles reported neuropsychological assessments to distinguish AD from normal aging and from other dementias (vascular dementia, frontotemporal dementia, LBD) [30–35]. Recently, eye-tracking has been proposed as an integrative tool for cognitive assessment [36]. Cognitive training, active music therapy, and neuroeducation are emerging issues in mild-moderate AD [37, 38].

Parkinson's disease (PD) is the most important field of research into movement disorders. The research of diagnostic and prognostic biomarkers is a field of high interest in PD [39–46]. Non-motor symptoms are now better recognized and treated [47–49]. Rasagiline has proved to be effective for dysexecutive syndrome [50]. Weight gain after subthalamic nucleus deep brain stimulation is a common side effect,

✉ Antonio Federico
federico@unisi.it

¹ Department of Medicine, Surgery and Neurosciences, Medical School, University of Siena, Viale Bracci 2, 53100 Siena, Italy

probably influenced by dyskinesias' reduction [51]. Transcranial direct current stimulation (tDCS) has proven to be an efficacious and safe treatment on fatigue reduction in Parkinson's disease [52]. Cognitive decline and psychiatric disorders can be present also in early stage of the disease [53–57]. Magnetic resonance measurements of brainstem structures have been reported to be useful in differentiating PD patients with not only progressive supranuclear palsy (PSP) but also from vascular parkinsonism [58]. Typical 3-Hz postural tremor seems to be predominant in MSA-C and can be useful in the differential diagnosis between MSA-P and MSA-C [59]. Combined visual and semi-quantitative assessments of ^{123}I -FP-CIT single-photon emission computed tomography (SPECT) show high sensitivity for the diagnosis of dopaminergic neurodegenerative diseases [60]. Quantitative tremor analysis can distinguish Parkinson's disease from dopamine receptor blocking agent-induced parkinsonism [61].

Headache is a widespread disorder and therefore it has a strong impact on quality of life [62, 63], also among children [64–67]. Migraine pathophysiology is not clearly understood, but it is commonly accepted that female hormones play a negative role [68, 69]. Calcitonin gene-related peptide (CGRP) may play an important role in cluster headache pathophysiology and could represent a potential therapeutic target [70, 71]. Migraine chronicization is a daunting complication and is probably also linked to structural, functional, and metabolic changes in the brain, especially involving the brainstem [72]. Infusion of methylprednisolone and diazepam should determine a consistent reduction in headache frequency and drug assumption during the detoxification for medication overuse headache [73]. Triptans remain highly effective for the treatment of acute migraine attacks [74], and intravenous mannitol for a high number of unresponsive migraine status [75]. Hypertension has been identified as one of the most important factors of chronic transformation of episodic migraine and increases the cerebrovascular and cardiovascular risk of migraine patients [76]. Telmisartan, a long-acting angiotensin II receptor blocker, has preventative benefits in non-responsive migraineurs [77]. OnabotulinumtoxinA, an effective treatment of chronic migraine, presents an increase of therapy efficacy and a progressive trend of “first-time response” [78]. Recent clinical experiences have demonstrated the safety, tolerability, and efficacy of non-invasive vagus nerve stimulation for the acute and prophylactic treatment of migraine also in adolescents [79–82]. Greater occipital nerve block may represent a therapeutic alternative in chronic migraine [83], while transcutaneous supraorbital neurostimulation is a promising technique [84]. Mindfulness or behavioral therapy is emerging as a helpful treatment for pain, also for chronic migraine [85, 86], while the role of nutraceuticals in migraine prophylaxis is debated [87]. Ketogenic diet is a promising therapy to counteract neuroinflammation in migraine [88]. Cognitive performances in

migraine patients show an impairment of executive functions, probably linked to the white matter lesions and the long history of drug abuse [89–91].

Epilepsy remains a field of high interest for neurologists, hard to treat in a not low percentage of cases, especially for secondary epilepsy [92–94]. Ketogenic diet may be effective but nutritional risks and potential impacts on biochemical nutritional status are possible [95]. Vigabatrin is associated with ocular disorders and evaluation of inner retinal layers with optic coherence tomography can have role in future monitoring of patients [96]. The role of phenytoin toward peripheral nerves is debated [97]. An early involvement of striatum/pallidum on MRI in super refractory status epilepticus has been recently associated with severe prognosis [98].

Research of pathogenic mechanism of **amyotrophic lateral sclerosis** (ALS) remains a point of principal interest, above all for the potential therapeutic target [99–101]. The association of multiple metals is probably involved in ALS degeneration [102]. Cognitive assessment for ALS patients is easily investigated with the Edinburgh Cognitive and Behavioural ALS Screen [103].

Atypical clinical **Myasthenia Gravis** (MG) patients may have been described [104]. Circulating follicular helper T (cTfh) cells are significantly higher in MG and may play a role in the immunopathogenesis and the production of anti-AChR Ab [105]. Tacrolimus is a valid option for the management of MG [106]. Coexistence of ALS and MG has been described and is associated with a bulbar onset and a worse prognosis [107]. Thymectomy represents an effective treatment for patients with non-thymomatous ocular myasthenia gravis [108].

Familial amyloidotic polyneuropathy is now easily diagnosed with genetic test and salivary gland biopsy [109–110]. High-dose intravenous immunoglobulin is a confirmed efficacious therapy for **multifocal motor neuropathy** [111]. Diagnosis of dysimmune peripheral neuropathies remains hard in some cases [112–115].

Primary brain tumors present a growing prevalence, especially among elderly people [116]. Expression of specific microRNA is related to pathological grading and prognosis of glioma [117, 118] and an evidence linking mobile phone use and risk of brain tumors has been found, especially in long-term users [119]. Extent of perilesional edema in brain metastasis from non-small cell lung cancer could be a predictive factor of response and brain progression after radiosurgery [120].

Many reports are dedicated to **rare neurologic diseases**, genetic disorders describing new developments on the molecular diagnosis [121–122], the clinical heterogeneity of the clinical spectrum [123–134], and the therapeutic opportunities [135–137].

In conclusion, during this year, Neurological Sciences has been full of interesting papers in many fields of neurological

research, confirming the good quality and actuality of the journal.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by the authors.

References

1. Khoshnam SE, Winlow W, Farzaneh M, Farbood Y, Moghaddam HF (2017) Pathogenic mechanisms following ischemic stroke. *Neurol Sci* 38(7):1167–1186
2. Chen Z, Zheng J, Liu W, Yang K, Li K, Huang B, Zhu R, Lu X, Li L (2017a) The SG13S114 polymorphism of the ALOX5AP gene is associated with ischemic stroke in Europeans: a meta-analysis of 8062 subjects. *Neurol Sci* 38(4):579–587
3. Gu L, Huang J, Liang B, Chen Q, Xie J, Yang J, Yan Y, Tang Q (2017) TLR4 polymorphisms affect stroke risk and inflammatory response in Chinese ischemic stroke patients. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3151-y>
4. Türkanoglu Özçelik A, Can Demirdöğen B, Demirkaya Ş, Adalı O (2017) Association of cytochrome P4502E1 and NAD(P)H: quinone oxidoreductase 1 genetic polymorphisms with susceptibility to large artery atherosclerotic ischemic stroke: a case-control study in the Turkish population. *Neurol Sci* 38(6):1077–1085
5. Formisano R, Azicnuda E, Sefid MK, Zampolini M, Scarponi F, Avesani R (2017) Early rehabilitation: benefits in patients with severe acquired brain injury. *Neurol Sci* 38(1):181–184
6. Talu B, Bazancir Z (2017) The effect of different ankle and knee supports on balance in early ambulation of post-stroke hemiplegic patients. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3065-8>
7. Giannini N, Ulivi L, Maccarrone M, Montano V, Orlandi G, Ferrari E, Cravencio C, Bonuccelli U, Mancuso M (2017) Epidemiology and cerebrovascular events related to cervical and intracranial arteries dissection: the experience of the city of Pisa. *Neurol Sci* 38(11):1985–1991
8. Introna A, Chiumarulo L, Petruzzellis M (2017) Dissecting aneurysm of extracranial internal carotid artery presenting with Tapsia syndrome in patient with essential thrombocythemia. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3017-3>
9. Lee JS, Rhee HY, Yoon SS, Park KC (2017) Neurosyphilis combined with acute anterior thalamic infarction. *Neurol Sci* 38(11):2061–2063
10. Maali L, Khan S, Qeadan F, Ismail M, Ramaswamy D, Hedna VS (2017) Cerebral venous thrombosis: continental disparities. *Neurol Sci* 38(11):1963–1968
11. Riolo M, Giussani G, Scaccabarozzi C, Lunghi A, Salmaggi A (2017) A case of recurrent stroke due to late onset antiphospholipid syndrome. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3070-y>
12. Nardetto L, Giometto B, Moretto G, Mantoan D, Saia M (2017) Hub-and-spoke stroke network in the Veneto region: a retrospective study investigating the effectiveness of the stroke pathway and trends over time. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3118-z>
13. Tejada-Meza H, Modrego PJ (2017) Cerebellar vermis: a vulnerable location of remote brain haemorrhages after thrombolysis for ischaemic stroke. *Neurol Sci* 38(1):185–187
14. Paciaroni M, Pantoni L (2017) Thrombolysis in dementia patients with acute stroke: is it justified? *Neurol Sci* 38(1):27–31
15. Amato MP, Bertolotto A, Brunelli R, Cavalla P, Goretti B, Marrosu MG, Patti F, Pozzilli C, Provinciali L, Rizzo N, Strobel N, Tedeschi G, Trojano M, Comi G (2017) Management of pregnancy-related issues in multiple sclerosis patients: the need for an interdisciplinary approach. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3081-8>
16. Filippi M, Tedeschi G, Pantano P, De Stefano N, Zaratin P, Rocca MA, INNI Network (2017) The Italian Neuroimaging Network Initiative (INNI): enabling the use of advanced MRI techniques in patients with MS. *Neurol Sci* 38(6):1029–1038
17. Frau J, Coghe G, Fenu G, Loreface L, Cocco E (2017) Rescue therapy with alemtuzumab in multiple sclerosis post-natalizumab puerperium reactivation. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3135-y>
18. Laroni A, Brogi D, Brescia Morra V, Guidi L, Pozzilli C, Comi G, Lugaresi A, Turrini R, Raimondi D, Uccelli A, Mancardi GL (2017) Safety and tolerability of fingolimod in patients with relapsing-remitting multiple sclerosis: results of an open-label clinical trial in Italy. *Neurol Sci* 38(1):53–59
19. Saccà F, Pane C, De Rosa A, Matarazzo M, Brescia Morra V (2017) Lamivudine and fingolimod co-administration in two patients with multiple sclerosis and occult hepatitis B virus infection. *Neurol Sci* 38(3):501–502
20. Qureshi M, Al-Suhaimi EA, Wahid F, Shehzad O, Shehzad A (2017) Therapeutic potential of curcumin for multiple sclerosis. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3149-5>
21. Maniscalco GT, Aponte R, Bruzzese D, Guarcello G, Manzo V, Napolitano M, Moreggia O, Chiariello F, Florio C (2017) THC/CBD oromucosal spray in patients with multiple sclerosis overactive bladder: a pilot prospective study. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3148-6>
22. Latino P, Castelli L, Prosperini L, Marchetti MR, Pozzilli C, Giovannelli M (2017) Determinants of botulinum toxin discontinuation in multiple sclerosis: a retrospective study. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3078-3>
23. Casanova B, Jarque I, Gascón F, Hernández-Boluda JC, Pérez-Miralles F, de la Rubia J, Alcalá C, Sanz J, Mallada J, Cervelló A, Navarré A, Carcelén-Gadea M, Boscá I, Gil-Perotin S, Solano C, Sanz MA, Coret F (2017) Autologous hematopoietic stem cell transplantation in relapsing-remitting multiple sclerosis: comparison with secondary progressive multiple sclerosis. *Neurol Sci* 38(7):1213–1221
24. Pessa ME, Baldi A, Gigli GL, Valente M (2017) A case of rapidly progressive dementia: Whipple disease of CNS. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3147-7>
25. Terrin A, Barp A, Zanusso G, Gallo P, Cagnin A (2017) Sporadic Creutzfeldt-Jakob disease presenting with isolated progressive non-fluent aphasia in a young woman. *Neurol Sci* 38(8):1535–1537
26. Bonanni L, Cagnin A, Agosta F, Babiloni C, Borroni B, Bozzali M, Bruni AC, Filippi M, Galimberti D, Monastero R, Muscio C, Parnetti L, Perani D, Serra L, Silani V, Tiraboschi P, Padovani A, DLB-SINdem study group (2017) The Italian dementia with Lewy bodies study group (DLB-SINdem): toward a standardization of clinical procedures and multicenter cohort studies design. *Neurol Sci* 38(1):83–91
27. Kawada T (2017) Epidemiological information of dementia with Lewy bodies. *Neurol Sci* 38(8):1533–1534
28. Ryu DW, Kim JS, Lee JE, Park JW, Oh YS, An JY, Lee KS (2017) Association of arterial stiffness with cognition in patients with Lewy body disorder. *Neurol Sci* 38(7):1307–1313
29. Federico A, Tamburin S, Maier A, Faccini M, Casari R, Morbioli L, Lugoboni F (2017) Multifocal cognitive dysfunction in high-

- dose benzodiazepine users: a cross-sectional study. *Neurol Sci* 38(1):137–142
30. Albonico A, Malaspina M, Daini R (2017) Italian normative data and validation of two neuropsychological tests of face recognition: Benton Facial Recognition Test and Cambridge Face Memory Test. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3030-6>
 31. Basagni B, Luzzatti C, Navarrete E, Caputo M, Scrocco G, Damora A, Giunchi L, Gemignani P, Caiazza A, Gambini MG, Avesani R, Mancuso M, Trojano L, De Tanti A (2017) VRT (verbal reasoning test): a new test for assessment of verbal reasoning. Test realization and Italian normative data from a multicentric study. *Neurol Sci* 38(4):643–650
 32. Boccia M, Marin D, D'Antuono G, Ciurli P, Incoccia C, Antonucci G, Guariglia C, Piccardi L (2017) The Tower of London (ToL) in Italy: standardization of the ToL test in an Italian population. *Neurol Sci* 38(7):1263–1270
 33. Catricalà E, Gobbi E, Battista P, Miozzo A, Polito C, Boschi V, Esposito V, Cuoco S, Barone P, Sorbi S, Cappa SF, Garrard P (2017) SAND: a Screening for Aphasia in NeuroDegeneration. Development and normative data. *Neurol Sci* 38(8):1469–1483
 34. Cerciello M, Isella V, Proserpi A, Papagno C (2017) Assessment of free and cued recall in Alzheimer's disease and vascular and frontotemporal dementia with 24-item Grober and Buschke test. *Neurol Sci* 38(1):115–122
 35. Chipi E, Frattini G, Eusebi P, Mollica A, D'Andrea K, Russo M, Bernardelli A, Montanucci C, Luchetti E, Calabresi P, Parnetti L (2017) The Italian version of cognitive function instrument (CFI): reliability and validity in a cohort of healthy elderly. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3150-z>
 36. Poletti B, Carelli L, Solca F, Lafronza A, Pedroli E, Faini A, Zago S, Ticozzi N, Ciammola A, Morelli C, Meriggi P, Cipresso P, Lulé D, Ludolph AC, Riva G, Silani V (2017) An eye-tracking controlled neuropsychological battery for cognitive assessment in neurological diseases. *Neurol Sci* 38(4):595–603
 37. Giovagnoli AR, Manfredi V, Parente A, Schifano L, Oliveri S, Avanzini G (2017) Cognitive training in Alzheimer's disease: a controlled randomized study. *Neurol Sci* 2017;38(8):1485–1493
 38. Xu B, Sui Y, Zhu C, Yang X, Zhou J, Li L, Ren L, Wang X (2017a) Music intervention on cognitive dysfunction in healthy older adults: a systematic review and meta-analysis. *Neurol Sci* 38(6):983–992
 39. Ataç Uçar C, Gökçe Çokal B, Ünal Artık HA, İnan LE, Yoldaş TK (2017) Comparison of neutrophil-lymphocyte ratio (NLR) in Parkinson's disease subtypes. *Neurol Sci* 38(2):287–293
 40. Gökçe Çokal B, Yurtdaş M, Keskin Güler S, Güneş HN, Ataç Uçar C, Aytac B, Durak ZE, Yoldaş TK, Durak İ, Çubukçu HC (2017) Serum glutathione peroxidase, xanthine oxidase, and superoxide dismutase activities and malondialdehyde levels in patients with Parkinson's disease. *Neurol Sci* 38(3):425–431
 41. Hu X, Yang Y, Gong D (2017) Cerebrospinal fluid levels of neurofilament light chain in multiple system atrophy relative to Parkinson's disease: a meta-analysis. *Neurol Sci* 38(3):407–414
 42. Jiang S, Gao H, Luo Q, Wang P, Yang X (2017) The correlation of lymphocyte subsets, natural killer cell, and Parkinson's disease: a meta-analysis. *Neurol Sci* 38(8):1373–1380
 43. Ou R, Cao B, Wei Q, Hou Y, Xu Y, Song W, Zhao B, Shang H (2017) Serum uric acid levels and freezing of gait in Parkinson's disease. *Neurol Sci* 38(6):955–960
 44. Park JS, Park D, Ko PW, Kang K, Lee HW (2017) Serum methylmalonic acid correlates with neuropathic pain in idiopathic Parkinson's disease. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3056-9>
 45. Xu XM, Dong MX, Feng X, Liu Y, Pan JX, Jia SY, Cao D, Wei YD (2017b) Decreased serum proNGF concentration in patients with Parkinson's disease. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3157-5>
 46. Wang L, Hu W, Wang J, Fang F, Cheng G, Jiang Y, Xiao H, Wan Q (2017) Impact of serum uric acid, albumin and their interaction on Parkinson's disease. *Neurol Sci* 38(2):331–336
 47. Cova I, Di Battista ME, Vanacore N, Papi CP, Alampi G, Rubino A, Valente M, Meco G, Contri P, Di Pucchio A, Lacorte E, Priori A, Mariani C, Pomati S (2017) Adaptation and psychometric properties of the Italian version of the Non-Motor Symptoms Questionnaire for Parkinson's disease. *Neurol Sci* 38(4):673–678
 48. Toffoli M, Dreussi E, Cecchin E, Valente M, Sanvilli N, Montico M, Gagno S, Garziera M, Polano M, Savarese M, Calandra-Buonaura G, Placidi F, Terzaghi M, Toffoli G, Gigli GL (2017) SNCA 3'UTR genetic variants in patients with Parkinson's disease and REM sleep behavior disorder. *Neurol Sci* 38(7):1233–1240
 49. Zhang X, Sun X, Wang J, Tang L, Xie A (2017a) Prevalence of rapid eye movement sleep behavior disorder (RBD) in Parkinson's disease: a meta and meta-regression analysis. *Neurol Sci* 38(1):163–170
 50. Rinaldi D, Assogna F, Sforza M, Tagliente S, Pontieri FE (2017) Rasagiline for dysexecutive symptoms during wearing-off in Parkinson's disease: a pilot study. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3123-2>
 51. Balestrino R, Baroncini D, Fichera M, Donofrio CA, Franzin A, Mortini P, Comi G, Volontè MA (2017) Weight gain after subthalamic nucleus deep brain stimulation in Parkinson's disease is influenced by dyskinesias' reduction and electrodes' position. *Neurol Sci* 38(12):2123–2129
 52. Forogh B, Rafei M, Arbabi A, Motamed MR, Madani SP, Sajadi S (2017) Repeated sessions of transcranial direct current stimulation evaluation on fatigue and daytime sleepiness in Parkinson's disease. *Neurol Sci* 38(2):249–254
 53. Papagno C, Trojano L (2017) Cognitive and behavioral disorders in Parkinson's disease: an update. I: cognitive impairments. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3154-8>
 54. Cannas A, Meloni M, Mascia MM, Solla P, Cocco L, Muronì A, Floris G, Di Stefano F, Marrosu F (2017) Capgras syndrome in Parkinson's disease: two new cases and literature review. *Neurol Sci* 38(2):225–231
 55. Santangelo G, Lagravinese G, Battini V, Chiorri C, Siciliano M, Abbruzzese G, Vitale C, Barone P (2017) The Parkinson's Disease-Cognitive Rating Scale (PD-CRS): normative values from 268 healthy Italian individuals. *Neurol Sci* 38(5):845–853
 56. Trojano L, Papagno C (2017) Cognitive and behavioral disorders in Parkinson's disease: an update. II: behavioral disorders. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3155-7>
 57. Yilmaz FT, Özkaynak SS, Barçın E (2017) Contribution of auditory P300 test to the diagnosis of mild cognitive impairment in Parkinson's disease. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3106-3>
 58. Kim BC, Choi SM, Choi KH, Nam TS, Kim JT, Lee SH, Park MS, Yoon W (2017) MRI measurements of brainstem structures in patients with vascular parkinsonism, progressive supranuclear palsy, and Parkinson's disease. *Neurol Sci* 38(4):627–633
 59. Li X, Wang Y, Wang Z, Xu Y, Zheng W (2017) 3-Hz postural tremor in multiple system atrophy cerebellar type (MSA-C)—a static posturography study. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3130-3>
 60. Ueda J, Yoshimura H, Shimizu K, Hino M, Kohara N (2017) Combined visual and semi-quantitative assessment of 123I-FP-CIT SPECT for the diagnosis of dopaminergic neurodegenerative diseases. *Neurol Sci* 38(7):1187–1191
 61. Shaikh AG (2017) Tremor analysis separates Parkinson's disease and dopamine receptor blockers induced parkinsonism. *Neurol Sci* 38(5):855–863
 62. Taga A, Russo M, Manzoni GC, Torelli P (2017) The PACE study: lifetime and past-year prevalence of headache in Parma's adult general population. *Neurol Sci* 38(5):789–795

63. Vladetić M, Jančuljak D, Butković Soldo S, Kralik K, Buljan K (2017) Health-related quality of life and ways of coping with stress in patients with migraine. *Neurol Sci* 38(2):295–301
64. Kurt ANC, Aydın A, Demir H, Erel Ö (2017) Headache in children and dynamic thiol/disulfide balance evaluation with a new method. *Neurol Sci* 38(8):1495–1499
65. Sangermani R, Boncimino A (2017) The use of nutraceuticals in children's and adolescent's headache. *Neurol Sci* 38(Suppl 1):121–124
66. Sevindik MS, Demirci S, Göksan B, Özge A, Savrun FK, Onur H, Yıldırım V, Simsek I, Ozhan H, Uludüz D (2017) Accompanying migrainous features in pediatric migraine patients with restless legs syndrome. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3045-z>
67. Taga A, Russo M, Genovese A, Paglia MV, Manzoni GC, Torelli P (2016) Pediatric migraine with aura in an Italian case series. *Neurol Sci* 38(Suppl 1):185–187. <https://doi.org/10.1007/s10072-017-2943-4>
68. Allais G, Chiarle G, Sinigaglia S, Airola G, Schiapparelli P, Bergandi F, Benedetto C (2017) Treating migraine with contraceptives. *Neurol Sci* 38(Suppl 1):85–89
69. Dogan VB, Dagdeviren H, Dirican A, Dirican AC, Tutar NK, Yayla VA, Cengiz H (2017) Hormonal effect on the relationship between migraine and female sexual dysfunction. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3023-5>
70. Ashina H, Newman L, Ashina S (2017) Calcitonin gene-related peptide antagonism and cluster headache: an emerging new treatment. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3101-8>
71. Barbanti P, Aurilia C, Fofi L, Egeo G, Ferroni P (2017a) The role of anti-CGRP antibodies in the pathophysiology of primary headaches. *Neurol Sci* 38(Suppl 1):31–35
72. Manzoni GC, Russo M, Taga A, Torelli P (2017) Neurobiology of chronicization. *Neurol Sci* 38(Suppl 1):81–84
73. Paolucci M, Altamura C, Brunelli N, Rizzo AC, Assenza F, Pasqualetti P, Vernieri F (2017) Methylprednisolone plus diazepam i.v. as bridge therapy for medication overuse headache. *Neurol Sci* 38(11):2025–2029
74. Menshawy A, Ahmed H, Ismail A, Abushouk AI, Ghanem E, Pallanti R, Negida A (2017) Intranasal sumatriptan for acute migraine attacks: a systematic review and meta-analysis. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3119-y>
75. De Simone R, Ranieri A, Ferra G, Cautiero F (2017) Intravenous mannitol in status migrainosus treatment: a clinical case series. *Neurol Sci* 38(Suppl 1):163–167
76. Finocchi C, Sassos D (2017) Headache and arterial hypertension. *Neurol Sci* 38(Suppl 1):67–72
77. Ikeda K, Hanashiro S, Ishikawa Y, Sawada M, Kyuzen M, Morioka H, Ebina J, Nagasawa J, Yanagihashi M, Miura K, Hirayama T, Takazawa T, Kano O, Kawabe K, Iwasaki Y (2017) Treatment with telmisartan, a long-acting angiotensin II receptor blocker, prevents migraine attacks in Japanese non-responders to lomerizine. *Neurol Sci* 38(5):827–831
78. Santoro A, Fontana A, Miscio AM, Zarrelli MM, Copetti M, Leone MA (2017) Quarterly repeat cycles of onabotulinumtoxinA in chronic migraine patients: the benefits of the prolonged treatment on the continuous responders and quality-of-life conversion rate in a real-life setting. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3054-y>
79. Foti M, Lo Buono V, Corallo F, Palmeri R, Bramanti P, Marino S (2017) Neuropsychological assessment in migraine patients: a descriptive review on cognitive implications. *Neurol Sci* 38(4):553–562. <https://doi.org/10.1007/s10072-017-2814-z>
80. Grazzi L (2017) Onabotulinumtoxin A for chronic migraine with medication overuse: clinical results of a long-term treatment. *Neurol Sci* 38(Suppl 1):141–143
81. Grazzi L, Egeo G, Liebler E, Padovan AM, Barbanti P (2017a) Non-invasive vagus nerve stimulation (nVNS) as symptomatic treatment of migraine in young patients: a preliminary safety study. *Neurol Sci* 38(Suppl 1):197–199
82. Lovati C, Giani L (2017) Action mechanisms of Onabotulinum toxin-A: hints for selection of eligible patients. *Neurol Sci* 38(Suppl 1):131–140
83. Ünal-Artık HA, İnan LE, Ataç-Uçar C, Yoldaş TK (2017) Do bilateral and unilateral greater occipital nerve block effectiveness differ in chronic migraine patients? *Neurol Sci* 38(6):949–954
84. Di Fiore P, Bussone G, Galli A, Didier H, Peccarisi C, D'Amico D, Frediani F (2017) Transcutaneous supraorbital neurostimulation for the prevention of chronic migraine: a prospective, open-label preliminary trial. *Neurol Sci* 38(Suppl 1):201–206
85. Dahlke LA, Sable JJ, Andrasik F (2017) Behavioral therapy: emotion and pain, a common anatomical background. *Neurol Sci* 38(Suppl 1):157–161
86. Grazzi L, D'Amico D, Raggi A, Leonardi M, Ciusani E, Corsini E, D'Andrea G, Bolner A, Salgado-García F, Andrasik F, Sansone E (2017b) Mindfulness and pharmacological prophylaxis have comparable effect on biomarkers of inflammation and clinical indexes in chronic migraine with medication overuse: results at 12 months after withdrawal. *Neurol Sci* 38(Suppl 1):173–175
87. D'Onofrio F, Raimo S, Spitaleri D, Casucci G, Bussone G (2017) Usefulness of nutraceuticals in migraine prophylaxis. *Neurol Sci* 38(Suppl 1):117–120
88. Barbanti P, Fofi L, Aurilia C, Egeo G, Caprio M (2017b) Ketogenic diet in migraine: rationale, findings and perspectives. *Neurol Sci* 38(Suppl 1):111–115
89. Galli A, Di Fiore P, D'Arrigo G, Uggetti C, Squarza S, Leone M, D'Amico D, Frediani F (2017) Migraine with aura white matter lesions: preliminary data on clinical aspects. *Neurol Sci* 38(Suppl 1):7–10
90. Viticchi G, Falsetti L, Bartolini M, Buratti L, Pistelli L, Provinciali L, Silvestrini M (2017) Raven coloured progressive matrices in migraine without aura patients. *Neurol Sci* 38(Suppl 1):177–179
91. Uggetti C, Squarza S, Longaretti F, Galli A, Di Fiore P, Reganati PF, Campi A, Ardemagni A, Cariati M, Frediani F (2017) Migraine with aura and white matter lesions: an MRI study. *Neurol Sci* 38(Suppl 1):11–13
92. Gasparini S, Ferlazzo E, Ascoli M, Sueri C, Cianci V, Russo C, Pisani LR, Striano P, Elia M, Beghi E, Colica C, Aguglia U, Epilepsy Study Group of the Italian Neurological Society (2017) Risk factors for unprovoked epileptic seizures in multiple sclerosis: a systematic review and meta-analysis. *Neurol Sci* 38(3):399–406
93. Jiménez-Arredondo RE, Brambila-Tapia AJ, Mercado-Silva FM, Ortiz-Aranda M, Benites-Godinez V, Olmos-García-de-Alba G, Figueroa LE (2017) Association between brain structural anomalies, electroencephalogram and history of seizures in Mucopolysaccharidosis type II (Hunter syndrome). *Neurol Sci* 38(3):445–450
94. Keller R, Basta R, Salerno L, Elia M (2017) Autism, epilepsy, and synaptopathies: a not rare association. *Neurol Sci* 38(8):1353–1361
95. Kose E, Guzel O, Arslan N (2017) Analysis of hematological parameters in patients treated with ketogenic diet due to drug-resistant epilepsy. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3152-x>
96. Tuğcu B, Bitnel MK, Kaya FS, Güveli BT, Ataklı D (2017) Evaluation of inner retinal layers with optic coherence tomography in vigabatrin-exposed patients. *Neurol Sci* 38(8):1423–1427
97. Keppel Hesselink JM, Kopsky DJ (2017) Phenytoin: neuroprotection or neurotoxicity? *Neurol Sci* 38(6):1137–1141
98. Ferrari A, Renzetti P, Serrati C, Fancellu R (2017) Serial magnetic resonance study in super refractory status epilepticus: progressive involvement of striatum and pallidus is a possible predictive marker of negative outcome. *Neurol Sci* 38(8):1513–1516

99. Park D, Park JS (2017) Terminal latency abnormality in amyotrophic lateral sclerosis without split hand syndrome. *Neurol Sci* 38(5):775–781
100. Sako W, Abe T, Izumi Y, Yamazaki H, Matsui N, Harada M, Kaji R (2017) Spontaneous brain activity in the sensorimotor cortex in amyotrophic lateral sclerosis can be negatively regulated by corticospinal fiber integrity. *Neurol Sci* 38(5):755–760
101. Yamashita T, Hatakeyama T, Sato K, Fukui Y, Hishikawa N, Ohta Y, Nishiyama Y, Kawai N, Tamiya T, Abe K (2017) Flow-metabolism uncoupling in the cervical spinal cord of ALS patients. *Neurol Sci* 38(4):659–665
102. Forte G, Bocca B, Oggiano R, Clemente S, Asara Y, Sotgiu MA, Farace C, Montella A, Fois AG, Malaguarnera M, Pirina P, Madeddu R (2017) Essential trace elements in amyotrophic lateral sclerosis (ALS): results in a population of a risk area of Italy. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3018-2>
103. Siciliano M, Trojano L, Trojsi F, Greco R, Santoro M, Basile G, Piscopo F, D'Iorio A, Patrone M, Femiano C, Monsurrò M, Tedeschi G, Santangelo G (2017) Edinburgh Cognitive and Behavioural ALS Screen (ECAS)-Italian version: regression based norms and equivalent scores. *Neurol Sci* 38(6):1059–1068
104. Sato T, Natori T, Hata T, Yamashiro N, Shindo K, Takiyama Y (2017) Camptocormia as an onset symptom of myasthenia gravis. *Neurol Sci* 38(3):515–516
105. Yang Y, Zhang M, Ye Y, Ma S, Fan L, Li Z (2017) High frequencies of circulating Tfh-Th17 cells in myasthenia gravis patients. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3009-3>
106. Tao X, Wang W, Jing F, Wang Z, Chen Y, Wei D, Huang X (2017) Long-term efficacy and side effects of low-dose tacrolimus for the treatment of Myasthenia Gravis. *Neurol Sci* 38(2):325–330
107. de Pasqua S, Cavallieri F, D'Angelo R, Salvi F, Fini N, D'Alessandro R, Rinaldi R, Fasano A, Mandrioli J (2017) Amyotrophic lateral sclerosis and myasthenia gravis: association or chance occurrence? *Neurol Sci* 38(3):441–444
108. Zhu K, Li J, Huang X, Xu W, Liu W, Chen J, Chen P, Feng H (2017) Thymectomy is a beneficial therapy for patients with non-thymomatous ocular myasthenia gravis: a systematic review and meta-analysis. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3058-7>
109. de Paula EF, de Mello BL, de Carvalho DL, Della-Guardia B, de Almeida MD, Marins LV, Corrêa L (2017) Minor salivary gland biopsy for the diagnosis of familial amyloid polyneuropathy. *Neurol Sci* 38(2):311–318
110. Stancanelli C, Gentile L, Di Bella G, Minutoli F, Russo M, Vita G, Mazzeo A (2017) Phenotypic variability of TTR Val122Ile mutation: a Caucasian patient with axonal neuropathy and normal heart. *Neurol Sci* 38(3):525–526
111. Nobile-Orazio E, Cocito D, Briani C, Plasmati R, Schenone A, Gallia F, Marjanovic I, Suffredini AL (2017) High-dose Ig VENA is well tolerated and efficacious in patients with multifocal motor neuropathy. *Neurol Sci* 38(5):899–902
112. Chen X, Wang Y, Cao Y (2017b) Guillain-Barré syndrome variant with facial diplegia and paresthesias after reactivation of varicella zoster virus. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-2994-6>
113. Franciotta D, Gastaldi M, Benedetti L, Pesce G, Biagioli T, Lolli F, Costa G, Melis C, Andreetta F, Simoncini O, Giannotta C, Bazzigaluppi E, Fazio R, Bedin R, Ferraro D, Mariotto S, Ferrari S, Galloni E, De Riva V, Zardini E, Cortese A, Nobile-Orazio E (2017a) Diagnostics of dysimmune peripheral neuropathies. *Neurol Sci* 38(Suppl 2):243–247
114. Franciotta D, Gastaldi M, Benedetti L, Garnero M, Biagioli T, Brogi M, Costa G, Fadda E, Andreetta F, Simoncini O, Giannotta C, Bazzigaluppi E, Fazio R, Bedin R, Ferraro D, Mariotto S, Ferrari S, Galloni E, De Riva V, Zardini E, Cortese A, Nobile-Orazio E (2017b) Diagnostics of anti-MAG antibody polyneuropathy. *Neurol Sci* 38(Suppl 2):249–252
115. Sakamoto Y, Shimizu T, Tobisawa S, Isozaki E (2017) Chronic demyelinating neuropathy with anti-myelin-associated glycoprotein antibody without any detectable M-protein. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3133-0>
116. Baldin E, Testoni S, de Pasqua S, Ferro S, Albani F, Baruzzi A, D'Alessandro R, PERNO study group (2017) Incidence of neuroepithelial primary brain tumors among adult population of Emilia-Romagna Region, Italy. *Neurol Sci* 38(2):255–262
117. Xue L, Wang Y, Yue S, Zhang J (2017) The expression of miRNA-221 and miRNA-222 in gliomas patients and their prognosis. *Neurol Sci* 38(1):67–73
118. Tang Y, Zhao S, Wang J, Li D, Ren Q, Tang Y (2017) Plasma miR-122 as a potential diagnostic and prognostic indicator in human glioma. *Neurol Sci* 38(6):1087–1092
119. Prasad M, Kathuria P, Nair P, Kumar A, Prasad K (2017) Mobile phone use and risk of brain tumours: a systematic review of association between study quality, source of funding, and research outcomes. *Neurol Sci* 38(5):797–810
120. Tini P, Nardone V, Pastina P, Battaglia G, Vinciguerra C, Carfagno T, Rubino G, Carbone SF, Sebaste L, Cerase A, Federico A, Pirtoli L (2017) Perilesional edema in brain metastasis from non-small cell lung cancer (NSCLC) as predictor of response to radiosurgery (SRS). *Neurol Sci* 38(6):975–982
121. Yuliang W, Yuan W, Xuezhen W, He M, Qi Z, Jinbo C (2017) A novel SPAST frameshift mutation in a Chinese family with hereditary spastic paraplegia. *Neurol Sci* 38(2):365–367
122. Zhao G, Liu X, Jiang P (2017) Identification of a novel SPG4 tandem base substitution in a Chinese hereditary spastic paraplegia family. *Neurol Sci* 38(5):903–905
123. Africa L, Margollicci M, Salvatore S, Shalhafan B, Peruzzi L, Togha M, Sorrentino V, Federico A (2017) Compound heterozygosity in the GALC gene in a late onset Iranian patient with spastic paraparesis, peripheral neuropathy and leukoencephalopathy. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-2986-6>
124. Carluccio MA, Di Donato I, Pescini F, Battagliani M, Bianchi S, Valenti R, Nannucci S, Franci B, Stromillo ML, De Stefano N, Inzitari D, Pantoni L, Nuti R, Federico A, Gonnelli S, Dotti MT (2017) Vitamin D levels in cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). *Neurol Sci* 38(7):1333–1336
125. Chiriaco C, Novellino F, Salsone M, Gagliardi M, Morelli M, Quattrone A (2017) Neuropsychological heterogeneity in patients with primary familial brain calcification due to a novel mutation in SLC20A2. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3125-0>
126. Da Pozzo P, Cardaioli E, Rubegni A, Gallus GN, Malandrini A, Rufa A, Battisti C, Carluccio MA, Rocchi R, Giannini F, Bianchi A, Mancuso M, Siciliano G, Dotti MT, Federico A (2017) Novel POLG mutations and variable clinical phenotypes in 13 Italian patients. *Neurol Sci* 38(4):563–570
127. Finsterer J, Scorza FA (2017) Phenotypic spectrum of POLG1 mutations. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3116-1>
128. Kim HJ, Yoon JH (2017) A case of Wilson's disease presenting with paroxysmal dystonia. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3008-4>
129. Safdarian M, Munhoz RP, Aghaei M, Rohani M (2017) Wilson's disease presenting as central pontine myelinolysis. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3064-9>
130. Ueno T, Nishizawa H, Suzuki C, Nunomura JI, Tomiyama M (2017) Downbeat nystagmus as an initial clinical sign in spinocerebellar ataxia type 6. *Neurol Sci* 38(8):1543–1545

131. Yoo YJ, Yang HK, Hwang JM (2017) Atypical Leber's hereditary optic neuropathy in a 10-year-old male: a case report. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3073-8>
132. Yucesan E, Ugur Iseri SA, Bilgic B, Gormez Z, Bakir Gungor B, Sarac A, Ozdemir O, Sagiroglu M, Gurvit H, Hanagasi H, Ozbek U (2017) SYNE1 related cerebellar ataxia presents with variable phenotypes in a consanguineous family from Turkey. *Neurol Sci*. <https://doi.org/10.1007/s10072-017-3049-8>
133. Zádori D, Szpisjak L, Madar L, Varga VE, Csányi B, Bencsik K, Balogh I, Harangi M, Kereszty É, Vécsei L, Klivényi P (2017) Different phenotypes in identical twins with cerebrotendinous xanthomatosis: case series. *Neurol Sci* 38(3):481–483
134. Zhang SY, Hu Q, Tang T, Liu C, Li CC, Yang XG, Zang YY, Cai WX (2017b) Role of CACNA1C gene polymorphisms and protein expressions in the pathogenesis of schizophrenia: a case-control study in a Chinese population. *Neurol Sci* 38(8):1393–1403
135. Buratti L, Luconi MP, Viticchi G, Provinciali L, Silvestrini M (2017) Vitamin D supplementation: a useful strategy for restless legs syndrome exacerbation in a patient with Turner syndrome. *Neurol Sci* 38(6):1135–1136
136. Leonardi L, Aceto MG, Marcotulli C, Arcuria G, Serrao M, Pierelli F, Paone P, Filla A, Roca A, Casali C (2017) A wearable proprioceptive stabilizer for rehabilitation of limb and gait ataxia in hereditary cerebellar ataxias: a pilot open-labeled study. *Neurol Sci* 38(3):459–463
137. Megías-Vericat JE, García-Robles A, Company-Albir MJ, Fernández-Megía MJ, Pérez-Miralles FC, López-Briz E, Casanova B, Poveda JL (2017) Early experience with compassionate use of 2 hydroxypropyl-beta-cyclodextrin for Niemann-Pick type C disease: review of initial published cases. *Neurol Sci* 38(5):727–743