

Parkinson's Disease

Current Awareness Bulletin

October 2024

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1. Imaging-Guided Subthalamic Nucleus Deep Brain Stimulation Programming for Parkinson Disease: A Real-Life Pilot Study.

Authors: Aubignat, Mickael; Berro, Alexis; Tir, Melissa and Lefranc, Michel

Publication Date: Dec ,2024

Journal: Neurology Clinical Practice 14(6), pp. e200326

Abstract: Background and Objectives: Deep brain stimulation (DBS) is a well-established treatment for Parkinson disease (PD), with programming methods continually evolving. This study aimed to compare the efficacy and patient burden between conventional ring-mode programming (CP-RM) and image-guided volume of tissue activated (IG-VTA) programming for subthalamic nucleus (STN) DBS in PD. Methods: In this retrospective study, patients with PD who underwent STN-DBS between 2011 and 2014 (CP-RM group) and 2019 and 2021 (IG-VTA group) were evaluated. The primary outcome was the improvement in the UPDRS III score from preoperative OFF to postoperative ON state without medication at one-year follow-up. Secondary outcomes included hospital stay duration and programming sessions. Results: A total of 26 patients were analyzed (IG-VTA: n = 12, CP-RM: n = 14). Both groups showed similar improvements in UPDRS III scores (IG-VTA: 43.62, CP-RM: 41.29). However, the IG-VTA group experienced shorter immediate postoperative hospital stays and fewer hospitalizations after discharge. Discussion: IG-VTA programming preserved the clinical efficacy of STN-DBS over 1 year and reduced the patient and clinician burden of hospital stay and programming sessions. However, conclusions drawn must consider the limitations of retrospective design, differing time epochs, and evolving clinical practices. Further multicentric and prospective studies are warranted to validate these findings in the evolving field of neurostimulation. Trial Registration Information: The trial is registered on clinicaltrials.gov (NCT05103072). Copyright © 2024 American Academy of Neurology.

2. Qualitative assessment of introducing bone health assessment for Parkinson's disease patients in a university hospital setting

Authors: Challoner, F., Cox, C., Richards, G., Amar, K. and Tiwari, D.

Publication Date: 2024

Publication Details: Age and Ageing. Conference: 2024 British Geriatrics Society Spring Meeting. Birmingham United Kingdom. 53(Supplement 3) (pp iii4); Oxford University Press,

Abstract: Introduction: Parkinson's disease (PD) patients with or without psychosis are at higher risk of recurrent falls and fracture and, as a consequence, higher mortality and morbidity NICE (13) Henderson et al. (2019). We conducted a qualitative study to understand barriers and facilitators of introducing 'bone health assessment' for PD patients. Method(s): We conducted a pilot study to identify and implement a bone health assessment tool to communicate falls and fracture risks to GPs. * SWOT and Stakeholder analysis was conducted to identify an appropriate bone health assessment tool. * PDSA cycles were completed to assess barriers and facilitators of bone health assessment in all PD clinical areas. * 4 Participants were identified from all possible PD clinical settings and trained on how to use the

FRAX assessment tool. * Semi structured interviews were conducted to explore themes from 6-week pilot study. Result(s): Bone health assessments were not conducted routinely in PD clinical settings in our Trust Literature review/SWOT and Stake holder analysis identified 'FRAX' score as an appropriate bone health assessment tool for PD patients. Interviews with participants identified time constraints during the clinical consultation as a major barrier to conducting bone health assessment using the FRAX assessment tool. All participants agreed that this improved communication with patients and GPs in understanding bone health and risk of falls and fractures. Face to face PD Nurse Clinics were deemed the most appropriate clinical settings for these assessments. Conclusion(s): As a result of this service improvement project bone health is now assessed in all PD Nurse clinics. This has enabled GPs to start the most appropriate bone protection treatment for PD patients.

3. Foslevodopa/foscarbidopa (LDp/CDp) in advanced Parkinson's Disease (aPD): demonstration of savings from a societal perspective in the UK.

Authors: Chaudhuri, K. R.;Bergmann, L.;Belsey, J.;Boodhna, T. and Leoncini, E.

Publication Date: 2024

Journal: Journal of Medical Economics , pp. 1–18

Abstract: AIMS: In advanced Parkinson's disease (aPD), adequate 24-hour control of OFF-time may not be achievable using oral/transdermal therapies. Clinical trials of foslevodopa/foscarbidopa (LDp/CDP) demonstrate meaningful reductions in OFF-time and OFF-related sleep disturbance in aPD. Previous analyses have only considered direct medical costs: this analysis considers a broader societal perspective (direct non-medical costs, informal care, loss of earnings, productivity and tax). METHOD(S): Inputs for the societal impact model were taken from a cost-utility model comparing LDp/CDp with best medical treatment (BMT), accepted by the UK National Institute of Health and Care Excellence (NICE). Quintiles of normalized OFF-time across a 16-hour waking day in each treatment group were applied to literature-based estimates for direct medical, non-medical and indirect costs. The resulting state-specific cost estimates were applied to the modelled aPD patient population. RESULT(S): The model estimates the potential UK population for LDp/CDp at 17,505. Continuous 24-hour delivery of LDp/CDp results in greater time spent in in OFF-time states 0-1 (0-4hours of OFF-time/16-hour waking day) vs BMT alone. Net savings if all eligible patients receive LDp/CDp are 79.1M in year 1, 235.4M in year 2, rising to 262.2M in year 3, declining to 222.9M in year 4 and 153.7M in year 5 as disease progresses and efficacy of LDp/CDp declines, Estimated total net savings are 953M after 5 years. Results are robust in scenario analyses (excluding costs of excessive sleepiness, earnings loss, productivity and tax loss). LIMITATIONS: A NICE-accepted model was used as the economic modelling basis for the societal impact model, however, much of the data was derived from Adelphi datasets, with the potential for inconsistent definitions. CONCLUSION(S): When considered from a societal perspective, the use of LDp/CDp in aPD patients inadequately controlled on oral therapy, is associated with net healthcare and societal annual savings of over 79.1M vs BMT.

4. Prospective Study of Lung Function with Prodromal, Clinical Parkinson's Disease, and Mortality.

Authors: Chen, X.;Zhang, Z.;Tong, L.;Wang, H.;Xu, X.;Sun, L.;Li, Y. and Gao, X.

Publication Date: 2024

Journal: Journal of Parkinson's Disease (pagination), pp. Date of Publication: 06 Se 2024

Abstract: Background: The association of lung function with the risk of developing prodromal and clinical-diagnosed Parkinson's disease (PD) and with the risk of mortality among individuals with PD remains unknown. Objective(s): To prospectively examine the associations of lung function with the risk of prodromal, clinical-diagnosed PD, and PD-related mortality in participants of the UK Biobank. Method(s): Included were 452,518 participants free of PD at baseline. Baseline lung function, including forced expiratory volume in 1-s (FEV1), forced vital capacity (FVC), peak expiratory flow (PEF), and FEV1/FVC ratio, was assessed. Eight prodromal features were measured using self-reported diagnoses, hospital admission, and primary care data. Incident PD cases were identified using linkages with hospital admission, death register, and self-report. Vital status and date of death were provided by the UK National Health Service (NHS) and the NHS Central Register. We used Cox proportional hazard models to evaluate these associations. Result(s): Poor lung function was associated with higher risk of PD in a dose-response relationship: the adjusted hazard ratio comparing the lowest vs. the highest lung function quintile was 1.18 (95% CI, 1.02- 1.37) for FEV1, 1.14 (95% CI, 0.99- 1.29) for FVC, and 1.23 (95% CI, 1.08- 1.41) for PEF (p-trend Result(s): Poor lung function was associated with higher risk of PD in a dose-response relationship: the adjusted hazard ratio comparing the lowest vs. the highest lung function quintile was 1.18 (95% CI, 1.02- 1.37) for FEV1, 1.14 (95% CI, 0.99- 1.29) for FVC, and 1.23 (95% CI, 1.08- 1.41) for PEF (p-trend Conclusion(s): The current study showed that individuals with poor lung function had a high future risk of prodromal and clinical PD and a higher rate of PD-related mortality.

5. How to optimise medicines management for people with Parkinson's disease in hospital.

Authors: Cox, C. M.

Publication Date: 2024

Journal: Nursing Older People (pagination), pp. Date of Publication: 04 Se 2024

Abstract: RATIONALE AND KEY POINTS: Hospital admissions can be challenging for people with Parkinson's disease, in part because of the lack of understanding, among some healthcare professionals, of the importance of administering antiparkinsonian medicines on time. This article outlines the steps that nurses can take to optimise medicines management for people with Parkinson's disease who are admitted to hospital. * Pharmacotherapy is the primary treatment for Parkinson's disease and aims to increase dopamine levels in the brain to relieve symptoms. * People with Parkinson's disease require careful administration, titration, adjustment and monitoring of their antiparkinsonian medicines regimen, which is highly individualised. * It is crucial that people with Parkinson's disease take their antiparkinsonian

medicines at exactly the right time, since the inaccurate timing of these medicines can have significant adverse health implications. REFLECTIVE ACTIVITY: 'How to' articles can help to update your practice and ensure it remains evidence-based. Apply this article to your practice. Reflect on and write a short account of: * How this article might improve your practice when undertaking medicines management for people with Parkinson's disease in hospital. * How you could use this information to educate nursing students or your colleagues on optimising medicines management for people with Parkinson's disease in hospital. Copyright © 2024 RCN Publishing Company Ltd. All rights reserved. Not to be copied, transmitted or recorded in any way, in whole or part, without prior permission of the publishers.

6. Delirium predicts poor outcomes in Parkinson's disease

Authors: Gerakios, F., Yarnall, A.J., Bate, G., Wright, L., Davis, D., Stephan, B.C.M., Robinson, L., Brayne, C., Stebbins, G., Taylor, J.P., Burn, D.J., Allan, L.M., Richardson, S.J. and Lawson, R.A.

Publication Date: 2024

Publication Details: Age and Ageing. Conference: 2024 British Geriatrics Society Spring Meeting. Birmingham United Kingdom. 53(Supplement 3) (pp iii25); Oxford University Press,

Abstract: Introduction: Reported delirium prevalence in inpatients with Parkinson's disease (PD) varies widely across the literature and is often underreported. Delirium is associated with an increased risk of institutionalisation, dementia, and mortality, but to date there are no comprehensive prospective studies in PD. We aimed to determine delirium prevalence in PD compared to older adults and its associated risk with adverse outcomes. Method(s): Participants from the 'Defining Delirium and its Impact in Parkinson's Disease' (DELIRIUM-PD) and the 'Delirium and Cognitive Impact in Dementia' (DECIDE) studies were included. People with PD (DELIRIUM-PD) or older adults from the Cognitive Function and Ageing Study II - Newcastle cohort (DECIDE) admitted to hospitals in Newcastle were approached to take part. Delirium was assessed prospectively using the Diagnostic and Statistical Manual of Mental Disorders - 5th Edition criteria. Outcomes were determined by medical note reviews and home visits 12 months post discharge. Cox regression or binary logistic regression were used to evaluate the effect of delirium on institutionalisation, dementia, and mortality, independent of covariates. Result(s): Delirium developed in 66.9% (n = 81/121) of PD participants compared to 38.7% (n = 77/199) of controls (pResult(s): Delirium developed in 66.9% (n = 81/121) of PD participants compared to 38.7% (n = 77/199) of controls (pConclusion(s): This is the first comprehensive prospective study of delirium in PD, showing that over two-thirds develop delirium during hospitalisation compared to a third of older adults. Delirium in PD is associated with a significant risk of dementia, institutionalisation, and death in one year. Furthermore, this is the first study to show that PD increases the risk of mortality and institutionalisation over and above a delirium in older adults.

7. Therapeutic Measures for Infections Originating from Scalp Incisions Following Deep Brain Stimulation in Patients with Parkinson's Disease.

Authors: Jia, X.;Li, J.;Zhang, W.;Wei, J. and Zhang, Y.

Publication Date: 2024

Journal: World Neurosurgery (pagination), pp. Date of Publication: 13 Se 2024

Abstract: BACKGROUND: Deep brain stimulation (DBS) is a well-established treatment for Parkinson's disease (PD). However, infection following DBS surgery is a serious complication that can lead to the recurrence and worsening of Parkinson's symptoms or related hardware re-implantation, causing considerable patient suffering and financial burden. OBJECTIVE(S): This study aims to compare the therapeutic efficiency of different treatment approaches for scalp incision infections after DBS surgery in PD patients. METHOD(S): We conducted a retrospective review of patients with Parkinson's disease who experienced scalp infections following deep brain stimulation at our hospital between January 2017 and December 2021. The patients were divided into two groups based on whether affected implants were removed or not. Fisher's exact test was applied to compare the reinfection rates between groups A and B. RESULT(S): In group A, four patients underwent debridement only, and all of them experienced reinfection between 2-25 months after the initial treatment. In group B, nine patients underwent debridement and removal of potentially affected implants. Among them, eight patients underwent re-implantation of the DBS device within 3-6 months after the initial treatment, and no cases of reinfection occurred. However, one patient experienced reinfection in the postauricular incision and percutaneous tunnel 5 months after the initial treatment, resulting in the complete removal of the entire DBS system. The reinfection rate in group B (11.11%) was significantly lower than that in group A (100%, $P=0.007$). CONCLUSION(S): Scalp incision infections following DBS surgery can affect deep tissues, and the implementation of a comprehensive treatment strategy involving local debridement and removal of potentially affected implants can significantly reduce the risk of infection recurrence and its spread. Copyright © 2024. Published by Elsevier Inc.

8. Levodopa Equivalent Daily Dosage: Geographical Variations and Real-Life Modules in Parkinson's Disease.

Authors: Kukkle, P. L.;Kalia, L. V.;Habib, A.;Jagota, P.;Ojha, R.;Kandadai, R. M.;Desai, S.;Caldera, M.;Sirisena, D.;Garg, D.;Mestre, T. A.;Neupane, R.;Maytharakcheep, S.;Sanyawut, K. and Borgohain, R.

Publication Date: 2024

Journal: Movement Disorders Clinical Practice (pagination), pp. Date of Publication: 2024

Abstract: Background: The Levodopa Equivalent Daily Dosage (LEDD) calculation algorithms help in capturing and harmonization of Parkinson's Disease (PD) therapies. Analyzing these updates is essential for validating their effectiveness. Objective(s): To assess updated LEDD conversion factors in capturing the newer therapies in PD and therapy modules in different geographical cohorts. Method(s): Data were sourced from 10 Centers from 6 countries representing 2 different continents. The study compared the LEDD conversion factors proposed by Tomlinson et al and Jost et al, alongside investigating demographic disparities. Result(s): The analysis involved 2943 subjects; 87% ($n = 2577$) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% ($n = 2577$) met the UK Brain

Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% (n = 2577) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% (n = 2577) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% (n = 2577) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% (n = 2577) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Result(s): The analysis involved 2943 subjects; 87% (n = 2577) met the UK Brain Bank criteria for PD. The LEDD differed significantly across methodologies (Tomlinson vs. Jost, 598 mg vs 610 mg, P Conclusion(s): This analysis delineates the importance of updated LEDD algorithms and intricacies in the landscape of PD treatment, underscored by geographical, age-related, and gender-specific variations, in real-life management scenarios. Copyright © 2024 International Parkinson and Movement Disorder Society.

9. Cardiovascular outcomes in Parkinson's disease patients from a retrospective cohort study.

Authors: Lim, Subin; Yum, Yun Jin; Kim, Jong-Ho; Lee, Chan-Nyoung; Joo, Hyung Joon and Kwon, Do-Young

Publication Date: 09 20 ,2024

Journal: Scientific Reports 14(1), pp. 21928

Abstract: Parkinson's disease (PD) reports high rates of morbidity and mortality, but the risk of adverse cardiovascular outcomes in patients with PD has not been fully elucidated. This bi-center retrospective cohort study using the electronic health records (EHR) database of two tertiary hospitals screened a total of 327,292 subjects who visited the outpatient clinic, and 1194 patients with PD were propensity score-matched with a control population. The primary outcome was the occurrence of major adverse cardiovascular events (MACE). Key secondary outcomes included all-cause death, cardiovascular (CV) death, stroke, myocardial infarction (MI), heart failure hospitalization and 30-day CV death. After PS matching, MACE occurrence was not significantly different between PD and non-PD groups (18.2% vs. 17.5%, log-rank $p = 0.98$). Key secondary outcomes were also similar between the two groups. In patients with PD, MACE rate, and also CV risk score, were higher in patients with more severe PD (according to Hoehn and Yahr scale and unified Parkinson's disease rating scale), and after multivariable analysis, PD severity was not an independent predictor of MACE. Patients with PD are at an increased risk of adverse cardiovascular outcomes, but the contribution from other common CV risk factors cannot be ignored. The management of prevalent CV risk factors is therefore important in mitigating adverse outcomes among patients with PD. Copyright © 2024. The Author(s).

10. Understanding what aspects of Parkinson's disease matter most to patients and families.

Authors: Mammen, Jennifer R.;Tyo, Mirinda;Cadorette, Joyce;Adams, Jamie L.;Xiao, Yuge;Stephenson, Diane and Bale, Claire

Publication Date: 09 11 ,2024

Journal: Scientific Reports 14(1), pp. 21171

Abstract: Understanding what matters to people with Parkinson's and their family is essential to derive relevant clinical outcome measures and guide clinical care. The purpose of this study was to explore what is important to people with Parkinson's disease vs. family over time. A qualitative content-analysis of online survey data collected by Parkinson's UK was conducted to identify types and frequencies of important symptoms and impacts of Parkinson's for people with the disease vs. family of people with Parkinson's. Independent T-tests were used to identify significance of between group differences for patients vs. family at 20-year durations. ANOVA was used to assess for within group differences by disease duration. We found that symptom priority changed significantly over time with longer disease duration. Tremor was reported less often later on, whereas mobility, dyskinesias, gait and speech/communication symptoms gained priority. In general, patients identified movement-related symptoms (e.g., walking, bradykinesia) as the most bothersome at all durations while family more strongly prioritized the physical and psychosocial impacts of disease (e.g., mobility, safety, interpersonal interactions, independence, and family impact). We conclude that important differences exist between family and patient perspectives of what matters and change over time with longer duration of disease. Copyright © 2024. The Author(s).

11. Time To Navigate (TTN): A practical objective clinical measure for freezing of gait severity in people with Parkinson's disease.

Authors: Scully, A. E.;Tan, D. M. L.;de Oliveira, B. I. R.;Hill, K. D.;Clark, R. and Pua, Y. H.

Publication Date: 2024

Journal: Archives of Physical Medicine and Rehabilitation (pagination), pp. Date of Publication: 18 Se 2024

Abstract: OBJECTIVES: To provide an easy-to-use measure, as existing objective assessments for freezing of gait (FOG) severity may be unwieldy for routine clinical practice, this study explored time taken to complete the recently-validated FOG Severity Tool and its components. DESIGN: Cross-sectional SETTING: Outpatient clinics of a tertiary hospital PARTICIPANTS: People with Parkinson's who could independently ambulate eight-metres, understand instructions, and without co-morbidities affecting gait were consecutively recruited. Thirty-five participants were included [82.9%(n=29)male; Median(IQR): age - 73.0(11.0)years; disease duration - 4.0(4.5)years]. INTERVENTIONS: Not applicable MAIN OUTCOME MEASURES: Participants were assessed with FOG Severity Tool in a test-retest design, with time taken for each component recorded using a stopwatch during video-analysis. Validity of total FOG Severity Tool time, time taken to complete its turning and narrow-space components

(i.e., Time To Navigate, TTN), and an adjusted-TTN were examined through correlations with validated FOG severity outcomes. To facilitate clinical interpretation, TTN cutoff was determined using scatterplot smoothing (LOESS) regression whilst minimal important change (MIC) was calculated using predictive modelling. RESULT(S): FOG Severity Tool time, TTN, and adjusted-TTN similarly demonstrated moderate correlations with the FOG Questionnaire and percentage-FOG, and very-high correlations with FOG Severity Tool-Revised. TTN was nonlinearly related to FOG severity, with a positive relationship observed in the first 300-seconds and plateauing after. MIC for TTN was 15.4-seconds reduction in timing (95%CI 3.2 to 28.7). CONCLUSION(S): TTN is a feasible, interpretable, and valid test of FOG severity. In busy clinical settings, TTN can provide a viable alternative when use of existing objective FOG measures is (often) unfeasible. Copyright © 2024. Published by Elsevier Inc.

12. The Development of a Quantitative Disability Assessment Tool in Patients with Idiopathic Parkinson's Disease.

Authors: Seo, H. G.;Yun, S. J.;Song, Y.;Lee, H. S.;Kim, D. H. and Chang, W. H.

Publication Date: 2024

Journal: Diagnostics 14(18) (pagination), pp. Article Number: 2063. Date of Publication: September 2024

Abstract: Background/Objectives: The objective of this study was to develop a novel quantitative disability assessment tool for patients with idiopathic Parkinson's disease (IPD). Method(s): A total of 47 patients with IPD were recruited from two hospitals. A specialist in Rehabilitation Medicine utilized the modified Schwab and England Activities of Daily Living Scale (mSEADL) as a reference, conducting a comprehensive medical chart review and an in-depth interview. The novel-developed disability measurement was calculated as $((mSEADL \text{ during the on-state}) \times (\text{time of on-state})) + ((mSEADL \text{ during the off-state}) \times (\text{time of off-state})) / (\text{waking time})$. Additionally, the degree of disability was assessed using the Korean version of the Modified Barthel Index during the on-state. Result(s): Twenty-four participants (51.1%) exhibited the off-state during waking hours. In patients exhibiting an off-state, the mSEADL score was significantly lower during the off-state than during the on-state (p Result(s): Twenty-four participants (51.1%) exhibited the off-state during waking hours. In patients exhibiting an off-state, the mSEADL score was significantly lower during the off-state than during the on-state (p Result(s): Twenty-four participants (51.1%) exhibited the off-state during waking hours. In patients exhibiting an off-state, the mSEADL score was significantly lower during the off-state than during the on-state (p Conclusion(s): The results demonstrated that larger IPD patients exhibited an on-off phenomenon with greater dependency during the off-state. Therefore, the on-off phenomenon should be considered when evaluating disability in patients with IPD, with methods such as the novel-developed disability measurement tool in this study. Copyright © 2024 by the authors.

13. Identifying potential causal effects of Parkinson's disease: A polygenic risk score-based phenome-wide association and mendelian randomization study in UK Biobank.

Authors: Shi, Changhe;Ma, Dongrui;Li, Mengjie;Wang, Zhiyun;Hao, Chenwei;Liang, Yuanyuan;Feng, Yanmei;Hu, Zhengwei;Hao, Xiaoyan;Guo, Mengnan;Li, Shuangjie;Zuo,

Chunyan;Sun, Yuemeng;Tang, Mibo;Mao, Chengyuan;Zhang, Chan;Xu, Yuming and Sun, Shilei

Publication Date: Sep 06 ,2024

Journal: Npj Parkinsons Disease 10(1), pp. 166

Abstract: There is considerable uncertainty regarding the associations between various risk factors and Parkinson's Disease (PD). This study systematically screened and validated a wide range of potential PD risk factors from 502,364 participants in the UK Biobank. Baseline data for 1851 factors across 11 categories were analyzed through a phenome-wide association study (PheWAS). Polygenic risk scores (PRS) for PD were used to diagnose Parkinson's Disease and identify factors associated with PD diagnosis through PheWAS. Two-sample Mendelian randomization (MR) analysis was employed to assess causal relationships. PheWAS results revealed 267 risk factors significantly associated with PD-PRS among the 1851 factors, and of these, 27 factors showed causal evidence from MR analysis. Compelling evidence suggests that fluid intelligence score, age at first sexual intercourse, cereal intake, dried fruit intake, and average total household income before tax have emerged as newly identified risk factors for PD. Conversely, maternal smoking around birth, playing computer games, salt added to food, and time spent watching television have been identified as novel protective factors against PD. The integration of phenotypic and genomic data may help to identify risk factors and prevention targets for PD. Copyright © 2024. The Author(s).

14. Care of Hospitalized Geriatric Patients with Parkinson's Disease: A Proactive, Multidisciplinary Approach.

Authors: Sine, Kathryn;Friedman, Joseph H. and Neupane, Iva

Publication Date: Oct 01 ,2024

Journal: Rhode Island Medicine 107(10), pp. 23–25

15. Decoding visual evoked potential latency: revealing neurological connections in Parkinson's disease.

Authors: Sipos-Lascu, Diana;Vesa, Stefan Cristian;Draghici, Nicu-Catalin;Livint Popa, Livia and Perju-Dumbrava, Lacramioara

Publication Date: Jun ,2024

Journal: Journal of Medicine & Life 17(6), pp. 639–643

Abstract: Parkinson's disease (PD) is a complex neurodegenerative disorder characterized by diverse motor and non-motor symptoms. Visual evoked potentials (VEPs) provide valuable insights into the neurological changes in PD. This study examines VEP latency to explore potential connections between visual processing and PD progression, focusing on whether inter-eye latency differences are influenced by disease severity and symptomatology. A cross-sectional observational study was conducted with 59 PD patients at the Neurology I Clinic,

Cluj-Napoca County Emergency Clinical Hospital, from October 2019 to October 2021. Patients underwent neurological and psychological evaluations, including VEP testing with a reversal pattern technique. P100 wave latency was assessed for both eyes, and associations with clinical indicators like Hoehn and Yahr stages, UPDRS scores, and non-motor symptoms were analyzed. VEP latencies for the right and left eyes were 108.7 +/- 10.6 ms and 108.4 +/- 9.7 ms, respectively, with no significant inter-eye differences (P = 0.8). UPDRS item 4 scores correlated significantly with both latencies (P = 0.003 for the left eye and P Copyright © 2024 by the authors.

16. The treatment gap for deep brain stimulation in Parkinson's disease: a comparative analysis of cost and utilisation in high-income countries.

Authors: Stein, A.;Higgins, N.;Gajwani, M. and Gericke, C. A.

Publication Date: 2024

Journal: Australian Health Review : A Publication of the Australian Hospital Association (pagination), pp. Date of Publication: 16 Se 2024

Abstract: ObjectiveParkinson's disease (PD) is one of the most prevalent neurodegenerative disorders, globally affecting approximately 120 per 100,000 people by age 70. Deep brain stimulation (DBS) is a US Federal Drug Administration (FDA)-approved and highly effective treatment for late-stage PD. However, country-specific reimbursement regulations and health policies may affect access to PD-DBS. We aimed to evaluate the uptake rate and 'treatment gap' for DBS across high-income countries.MethodsWe reviewed previous literature to investigate the cost and utilisation of PD-DBS in high-income countries across Asia, Europe, Oceania, and North America (Australia, Canada, France, Germany, Hong Kong, Japan, Korea, the Netherlands, New Zealand, Norway, Spain, Switzerland, UK, and USA). Using previous estimates of DBS candidate eligibility rates, we calculated theoretical DBS uptake rates and treatment gaps nationally.ResultsPD-DBS utilisation was highest in Australia and the USA and lowest in Korea and New Zealand. The total cost of PD-DBS in the first 12months was highest in the USA and France and lowest in the UK and Germany. The utilisation rate (i.e. uptake rate) of PD-DBS (% DBS surgeries per PD case) was highest in Australia and the USA, and lowest in New Zealand and the UK, where the treatment gap reflected these trends.ConclusionsOur results highlight differences in access to DBS for PD patients among high-income countries, which we discuss in the context of health systems. Better access to effective PD treatments such as DBS is critical given the increasing prevalence of PD in an ageing world and the associated, avoidable morbidity.

17. Detection of cognitive deficits years prior to clinical diagnosis across neurological conditions.

Authors: Tai, X. Y.;Toniolo, S.;Llewellyn, D.;van Duin, C. M.;Husain, M. and Manohar, S.

Publication Date: 2024

Journal: medRxiv (pagination), pp. Date of Publication: 10 Jul 2024

Abstract: Importance: Understanding the cognitive trajectory of a neurological disease can provide important insight on underlying mechanisms and disease progression. Cognitive impairment is now well established as beginning many years before the diagnosis of Alzheimer's disease, but pre-diagnostic profiles are unclear for other neurological conditions that may be associated with cognitive impairment. Objective(s): Compare pre-diagnostic and post-diagnostic cognition and global brain volume in ischaemic stroke, focal epilepsy, Parkinson's disease, multiple sclerosis, motor neurone disease (amyotrophic lateral sclerosis) and migraine using time-to-diagnosis and time-from-diagnosis data in relation to time of assessment. Design(s): Analysis the prospective UK Biobank cohort with study baseline assessment performed between 2006-2010 and participants followed until 2021. Setting(s): Multicenter, population-based study. Participant(s): Sample of 497,252 participants, aged between 38 and 72 years, at baseline with an imaging sub-sample of 42,468 participants. Exposure: Participants with each neurological condition were compared to a healthy control group. Main Outcomes and Measures: A continuous measure of executive function and magnetic resonance imaging brain measures of total grey matter and hippocampal volume. Result(s): Of the 497,252 participants (226,206 [45.5%] men, mean [SD] age, 57.5[8.1] years), 12,755 had ischaemic stroke, 6,758 had a diagnosis of focal epilepsy, 3,315 had Parkinson's disease, 2,315 had multiple sclerosis, 559 had motor neurone disease and 18,254 had migraine either at study baseline or diagnosed during the follow-up period. Apart from motor neurone disease, all conditions had lower pre-diagnosis executive function compared to controls (assessment performed median 7.4 years before diagnosis). Participants with focal epilepsy and multiple sclerosis showed a gradual worsening in executive function up to 15 years prior to diagnosis, while ischaemic stroke was characterised by a modest decline for a few years followed by a substantial reduction at the time of diagnosis. By contrast, participants with migraine showed improved post-diagnosis cognitive scores. Pre-diagnosis MRI grey matter volume was lower than controls for stroke, Parkinson's disease and multiple sclerosis (scans performed median 1.7 years before diagnosis), while other conditions had lower volumes post-diagnosis. Conclusion(s): These cognitive trajectory models reveal disease-specific temporal patterns, including a long cognitive prodrome associated with focal epilepsy and multiple sclerosis. The findings may help to prioritise risk management of individual diseases and inform clinical decision-making. Copyright The copyright holder for this preprint is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. It is made available under a CC-BY-NC-ND 4.0 International license.

18. Regular Use of Laxatives Influence Dose of Dopaminergic Medication in Patients with Parkinsonism.

Authors: Yasutaka, Y.;Fujioka, S.;Mishima, T.;Imakyure, O.;Tsuboi, Y. and Kamimura, H.

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Abstract: Patients with neurodegenerative parkinsonian diseases often take medications for constipation. Thus far, few studies have investigated the association between the regular use of constipation medications and the use of dopaminergic medication in patients with neurodegenerative parkinsonian diseases. In addition, no reports have classified constipation medications according to the mechanism of action and evaluated the levodopa equivalent

dose(LED). This study analyzed 163 patients with neurodegenerative parkinsonian diseases who had been taking levodopa at the time of admission to the Department of Neurology, Fukuoka University Hospital from January 2016 to December 2018. Patients who regularly used constipation medications were defined as constipation medication users. Ninety-two patients(56.4%)who had neurodegenerative parkinsonian diseases regularly used constipation medications. The regular use of constipation medications was associated with the number of medications taken(odds ratio 1.292, 95% confidence interval 1.121-1.490). The LED of neurodegenerative parkinsonian disease patients who regularly used stimulant laxatives was significantly higher in comparison to those who did not regularly use constipation medications(PCopyright © 2020 Life Science Publishing Co. Ltd. All rights reserved.

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