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Parkinson's Disease

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December 2023

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1. **Progressive supranuclear palsy: A case report and brief review of the literature**

Authors: Batheja, V., Fish, M., Balar, A.B., Hogg, J.P., Lakhani, D.A. and Khan, M.

Publication Date: 2024

Publication Details: Netherlands:

Abstract: Atypical Parkinsonian syndromes are a subset of progressive neurodegenerative disorders that present with signs of Parkinson's disease. However, due to multisystem degeneration, the atypical Parkinsonian syndromes have additional symptoms that are often referred to as Parkinson-plus syndromes. The most well-studied subsets include progressive supranuclear palsy (PSP), multiple system atrophy (MSA), corticobasal degeneration (CBD), and Lewy body dementia. Specifically, progressive supranuclear palsy is a tauopathy neurodegenerative disorder that presents with parkinsonism symptoms along with postural instability, vertical saccade, and vertical gaze palsy. Here, we present a case of PSP and provide a brief review of the literature. Copyright © 2023 Published by Elsevier Inc. on behalf of University of Washington.

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2. **Pain in monogenic Parkinson's disease: a comprehensive review**

Authors: Alizadeh, Parisa;Terroba-Chambi, Cinthia;Achen, Beatrice and Bruno, Veronica

Publication Date: 2023

Journal: Frontiers in Neurology [Electronic Resource] 14, pp. 1248828

Abstract: Pain, a challenging symptom experienced by individuals diagnosed with Parkinson's disease (PD), still lacks a comprehensive understanding of its underlying pathophysiological mechanisms. A systematic investigation of its prevalence and impact on the quality of life in patients affected by monogenic forms of PD has yet to be undertaken. This comprehensive review aims to provide an overview of the association between pain and monogenic forms of PD, specifically focusing on pathogenic variants in SNCA, PRKN, PINK1, PARK7, LRRK2, GBA1, VPS35, ATP13A2, DNAJC6, FBXO7, and SYNJ1. Sixty-three articles discussing pain associated with monogenic PD were identified and analyzed. The included studies exhibited significant heterogeneity in design, sample size, and pain outcome measures. Nonetheless, the findings of this review suggest that patients with monogenic PD may experience specific types of pain depending on the pathogenic variant present, distinguishing them from non-carriers. For instance, individuals with SNCA pathogenic variants have reported painful dystonia, lower extremity pain, dorsal pain, and upper back pain. However, these observations are primarily based on case reports with unclear prevalence. Painful lower limb dystonia and lower back pain are prominent symptoms in PRKN carriers. A continual correlation has been noted between LRRK2 mutations and the emergence of pain, though the conflicting research outcomes pose challenges in reaching definitive conclusions. Individuals with PINK1 mutation carriers also frequently report experiencing pain. Pain has been frequently reported as an initial symptom and the most troublesome one in GBA1-PD patients compared to those with idiopathic PD. The evidence regarding pain in ATP13A2, PARK7, VPS35, DNAJC6, FBXO7, and SYNJ1pathogenic variants is limited and insufficient. The potential linkage between genetic profiles and pain outcomes holds promising clinical implications, allowing for the potential stratification of patients in clinical trials and the development of personalized treatments for pain in monogenic PD. In conclusion, this review underscores the need for further research to unravel the intricate relationship between pain and monogenic forms of PD. Standardized methodologies, larger sample sizes, and longitudinal studies are essential to elucidate the underlying mechanisms and develop targeted therapeutic interventions for pain management in individuals with monogenic PD. Copyright © 2023 Alizadeh, Terroba-Chambi, Achen, and Bruno

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3. **Mitochondrial dysfunction and neurological disorders: A narrative review and treatment overview**

Authors: Alshial, Eman E.;Abdulghaney, Muhammad Idris;Wadan, Al-Hassan Soliman;Abdellatif,

Mohamed Abdelfatah;Ramadan, Nada E.;Suleiman, Aya Muhammed;Waheed, Nahla;Abdellatif, Maha and Mohammed, Haitham S.

Publication Date: Dec 01 ,2023

Journal: Life Sciences 334, pp. 122257

Abstract: Mitochondria play a vital role in the nervous system, as they are responsible for generating energy in the form of ATP and regulating cellular processes such as calcium (Ca2+) signaling and apoptosis. However, mitochondrial dysfunction can lead to oxidative stress (OS), inflammation, and cell death, which have been implicated in the pathogenesis of various neurological disorders. In this article, we review the main functions of mitochondria in the nervous system and explore the mechanisms related to mitochondrial dysfunction. We discuss the role of mitochondrial dysfunction in the development and progression of some neurological disorders including Parkinson's disease (PD), multiple sclerosis (MS), Alzheimer's disease (AD), depression, and epilepsy. Finally, we provide an overview of various current treatment strategies that target mitochondrial dysfunction, including pharmacological treatments, phototherapy, gene therapy, and mitotherapy. This review emphasizes the importance of understanding the role of mitochondria in the nervous system and highlights the potential for mitochondrial-targeted therapies in the treatment of neurological disorders. Furthermore, it highlights some limitations and challenges encountered by the current therapeutic strategies and puts them in future perspective.

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4. **Predictors and Pathophysiology of Axial Postural Abnormalities in Parkinsonism: A Scoping Review**

Authors: Artusi, Carlo Alberto;Geroin, Christian;Nonnekes, Jorik;Aquino, Camila;Garg, Divyani;Dale, Marian L.;Schlosser, Darbe;Lai, Yijie;Al-Wardat, Mohammad;Salari, Mehri;Wolke, Robin;Labou, Valery Tsinda;Imbalzano, Gabriele;Camozzi, Serena;Merello, Marcelo;Bloem, Bastiaan R.;Capato, Tamine;Djaldetti, Ruth;Doherty, Karen;Fasano, Alfonso, et al

Publication Date: Nov ,2023

Journal: Movement Disorders Clinical Practice 10(11), pp. 1585-1596

Abstract: Background: Postural abnormalities involving the trunk are referred to as axial postural abnormalities and can be observed in over 20% of patients with Parkinson's disease (PD) and in atypical parkinsonism. These symptoms are highly disabling and frequently associated with back pain and a worse quality of life in PD. Despite their frequency, little is known about the pathophysiology of these symptoms and scant data are reported about their clinical predictors, making it difficult to prompt prevention strategies. Objectives: We conducted a scoping literature review of clinical predictors and pathophysiology of axial postural abnormalities in patients with parkinsonism to identify key concepts, theories and evidence on this topic. Methods: We applied a systematic approach to identify studies, appraise quality of evidence, summarize main findings, and highlight knowledge gaps. Results: Ninety-two articles were reviewed: 25% reported on clinical predictors and 75% on pathophysiology. Most studies identified advanced disease stage and greater motor symptoms severity as independent clinical predictors in both PD and multiple system atrophy. Discrepant pathophysiology data suggested different potential central and peripheral pathogenic mechanisms. Conclusions: The recognition of clinical predictors and pathophysiology of axial postural abnormalities in parkinsonism is far from being elucidated due to literature bias, encompassing different inclusion criteria and measurement tools and heterogeneity of patient samples. Most studies identified advanced disease stage and higher burden of motor symptoms as possible clinical predictors. Pathophysiology data point toward many different (possibly non-mutually exclusive) mechanisms, including dystonia, rigidity, proprioceptive and vestibular impairment, and higher cognitive deficits.

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5. **Behind the Mask of Parkinsonism: A Case Report and Literature Review on Progressive**

Supranuclear Palsy

Authors: Asbeutah, S., Ponomareva, G., Molla, M. and Shah, S.

Publication Date: 2023

Publication Details: United States:

Abstract: Progressive supranuclear palsy (PSP) is a neurodegenerative condition that typically emerges in adulthood and does not exhibit any familial inheritance pattern. PSP is characterized by gradual stiffness in the central body, an inability to move the gaze upward voluntarily, postural instability, and a decline in cognitive function linked to frontal lobe dysfunction. Clinical assessment reveals a variety of findings, and cases of PSP frequently go unnoticed or are incorrectly diagnosed as other conditions. Notably, prominent neurotransmitter-related changes in PSP involve damage to the dopaminergic nigrostriatal pathway and cholinergic impairment in multiple regions. We hereby present a case of a 71-year-old female patient whose medical journey unfolds as a perplexing riddle. Despite the collective expertise of several physicians, she found herself bearing the weight of a misdiagnosis ascribed to Parkinson's Disease (PD) erroneously. She initially presented with recurring falls due to postural instability and bradykinesia, which progressed such that she became dependent on a walking aid. A comprehensive physical examination revealed indicators consistent with PSP. Copyright © 2023, Asbeutah et al

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6. **NR-SAFE: a randomized, double-blind safety trial of high dose nicotinamide riboside in Parkinson's disease.**

Authors: Berven, Haakon;Kverneng, Simon;Sheard, Erika;Sognen, Mona;Af Geijerstam, Solveig Amdahl;Haugarvoll, Kristoffer;Skeie, Geir-Olve;Dolle, Christian and Tzoulis, Charalampos

Publication Date: Nov 28 ,2023

Journal: Nature Communications 14(1), pp. 7793

Abstract: Nicotinamide adenine dinucleotide (NAD) replenishment therapy using nicotinamide riboside (NR) shows promise for Parkinson's disease (PD) and other neurodegenerative disorders. However, the optimal dose of NR remains unknown, and doses exceeding 2000 mg daily have not been tested in humans. To evaluate the safety of high-dose NR therapy, we conducted a single-center, randomized, placebo-controlled, double-blind, phase I trial on 20 individuals with PD, randomized 1:1 on NR 1500 mg twice daily (n = 10) or placebo (n = 10) for four weeks. The trial was conducted at the Department of Neurology, Haukeland University Hospital, Bergen, Norway. The primary outcome was safety, defined as the frequency of moderate and severe adverse events. Secondary outcomes were tolerability defined as frequency of mild adverse events, change in the whole blood and urine NAD metabolome, and change in the clinical severity of PD, measured by MDS-UPDRS. All 20 participants completed the trial. The trial met all prespecified outcomes. NR therapy was well tolerated with no moderate or severe adverse events, and no significant difference in mild adverse events. NR therapy was associated with clinical improvement of total MDS-UPDRS scores. However, this change was also associated with a shorter interval since the last levodopa dose. NR greatly augmented the blood NAD metabolome with up to 5-fold increase in blood NAD+ levels. While NR-recipients exhibited a slight initial rise in serum homocysteine levels, the integrity of the methyl donor pool remained intact. Our results support extending the dose range of NR in phase II clinical trials to 3000 mg per day, with appropriate safety monitoring. Clinicaltrials.gov identifier: NCT05344404. Copyright © 2023. The Author(s)

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7. **Pre-existing neurological conditions and COVID-19 co-infection: Data from systematic reviews, meta-analyses, and scoping reviews**

Authors: Boruah, Abhilasha P.;Thakur, Kiran T.;Gadani, Sachin P.;Kothari, Kavita U.;Chomba, Mashina;Guekht, Alla;Heydari, Kimia;Hoo, Fan Kee;Hwang, Soonmyung;Michael, Benedict D.;Pandit,

Maya V.;Pardo, Carlos A.;Prasad, Kameshwar;Sardar, Zomer;Seeher, Katrin;Solomon, Tom;Winkler, Andrea S.;Wood, Greta K. and Schiess, Nicoline

Publication Date: Dec 15 ,2023

Journal: Journal of the Neurological Sciences 455, pp. 120858

Abstract: BACKGROUND: Pre-existing neurological diseases have been identified as risk factors for severe COVID-19 infection and death. There is a lack of comprehensive literature review assessing the relationship between pre-existing neurological conditions and COVID-19 outcomes. Identification of high risk groups is critical for optimal treatment and care. METHODS: A literature review was conducted for systematic reviews, meta-analyses, and scoping reviews published between January 1, 2020 and January 1, 2023. Literature assessing individuals with pre-existing neurological diseases and COVID-19 infection was included. Information regarding infection severity was extracted, and potential limitations were identified. RESULTS: Thirty-nine articles met inclusion criteria, with data assessing >3 million patients from 51 countries. 26/51 (50.9%) of countries analyzed were classified as high income, while the remaining represented middle-low income countries (25/51; 49.0%). A majority of evidence focused on the impact of cerebrovascular disease (17/39; 43.5%) and dementia (5/39; 12.8%) on COVID-19 severity and mortality. 92.3% of the articles (36/39) suggested a significant association between neurological conditions and increased risk of severe COVID-19 and mortality. Cerebrovascular disease, dementia, Parkinson's disease, and epilepsy were associated with increased COVID severity and mortality. CONCLUSION: Pre-existing neurological diseases including cerebrovascular disease, Alzheimer's disease and other dementias, epilepsy, and Parkinson's disease are significant risk factors for severity of COVID-19 infection and mortality in the acute infectious period. Given that 61.5% (24/39) of the current evidence only includes data from 2020, further updated literature is crucial to identify the relationship between chronic neurological conditions and clinical characteristics of COVID-19 variants. Copyright © 2023. Published by Elsevier B.V

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8. **Dysphagia and aspiration during a Parkinson's hospitalization: a care partner's perspective and recommendations for improving standards of care.**

Authors: Brooks, A.

Publication Date: 2023

Journal: Frontiers in Aging Neuroscience 15(pagination), pp. no pagination

Abstract: People with Parkinson's disease have a significantly increased incidence and risk of aspiration pneumonia when compared to those without. Aspiration pneumonia associated with dysphagia (swallowing issues), which is the leading cause of death among people with Parkinson's disease, accounting for 25% of Parkinson's deaths. There is relatively limited evidence of the most effective strategies to balance the competing needs of each Parkinson's patient as providers aim to prevent, diagnose, and manage dysphagia. Exacerbated, and in part caused, by the intricacies of dysphagia and Parkinson's disease, there is still limited understanding among hospital providers and the Parkinson's community regarding the most appropriate measures to prevent and manage dysphagia in Parkinson's disease. The Parkinson's Foundation Hospital Care Recommendations identified the prevention and management of dysphagia as a care standard necessary to eliminate harm and attain higher reliability in care. This article discusses key components of dysphagia management in the hospital, provides a case example to demonstrate the challenges that people with PD and their care partners experience in the hospital related to dysphagia, and offers recommendations on how to better manage dysphagia and involve care partners in PD hospital care. Copyright © 2023 Brooks.

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9. **Anesthetic Considerations for Cataract Surgery in Patients with Parkinson's Disease: A Narrative Review**

Authors: Chiew, Alyssa;Mathew, David;Kumar, Chandra M.;Seet, Edwin;Imani, Farnad and Khademi,

Seyed-Hossein

Publication Date: Jun ,2023

Journal: Anesthesiology & Pain Medicine 13(3), pp. e136093

Abstract: Parkinson's disease (PD) is a chronic neurological degenerative disease affecting the central nervous system, which is responsible for progressive disorders such as slow movements, tremors, rigidity, and cognitive disorders. There are no specific recommendations and guidelines for anesthetic management of patients with PD undergoing ophthalmic procedures. This narrative review aims to summarise the anesthetic considerations in patients with PD presenting for cataract surgery. Copyright © 2023, Chiew et al.

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10. **Impulse Control Disorders in Patients with Pituitary Tumors Treated with Dopamine Agonists: A Systematic Review.**

Authors: Hamblin, Ross and Karavitaki, Niki

Publication Date: Dec ,2023

Journal: Archives of Medical Research 54(8), pp. 102910

Abstract: BACKGROUND: The increased prevalence of Impulse Control Disorders (ICDs) in dopamine agonist (DA) treated patients with Parkinson's disease is well described. Despite the frequent use of DAs in the management of pituitary tumors, the relationship between DAs and prevalence of ICDs in patients with pituitary tumours is unclear. AIMS: To establish the prevalence of ICDs in patients with prolactinoma or acromegaly and determine whether prevalence differs in those on DAs to those treated without. METHODS: Systematic review of the literature (registered a priori) reporting prevalence of ICDs in patients with prolactinoma or acromegaly (conducted June 2023). A narrative synthesis describing prevalence of ICDs according to assessment method was performed. Prevalence comparisons between patients with prolactinoma or acromegaly treated with DAs, to patients treated without, were summarised. RESULTS: Studies were largely retrospective, observational and heterogenous, with few patients with prolactinoma and acromegaly treated without DA. Prevalence of ICDs varied between 0-60% in patients with prolactinoma, and from 5-23% in studies with at least five patients with acromegaly. In most studies comparing DA exposed to non-DA exposed cases, DA use was not associated with ICDs. CONCLUSIONS: Reported prevalence of ICDs in patients with prolactinoma and acromegaly varies considerably. Given ICDs were reported to be highly prevalent in some studies, clinicians should be mindful of these potentially serious disorders. ICD screening tools validated for use in patients with pituitary tumors combined with prospective studies including appropriate controls, are necessary to accurately establish prevalence of ICDs and true impact of DAs in their development. Copyright © 2023. Published by Elsevier Inc.

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11. **A Review of Artificial Intelligence-Based Gait Evaluation and Rehabilitation in Parkinson's Disease**

Authors: Jadhwani, Purvi L. and Harjpal, Pallavi

Publication Date: Oct ,2023

Journal: Cureus 15(10), pp. e47118

Abstract: Parkinson's disease (PD) is a long-term degenerative disease of the central nervous system that affects both motor and non-motor functions. In most cases, symptoms develop gradually, with non-motor symptoms increasing in frequency as the condition progresses. Tremors, stiffness, slow movements, and difficulty walking are some of the early symptoms. There may be problems with cognition, behavior, sleep, and thinking. Dementia caused by PD becomes more common as the disease progresses. The development of PD is linked to certain sequences of motion that eventually

contribute to diminished function. Patients with Parkinson's disease (PWPD) have a sluggish, scattered gait that is accompanied by intermittent freezing of gait (FOG), in which efficient heading briefly pauses. In individuals with severe PD, FOG is a neurological deficit that is related to falls and has an unfavorable impact on the patient's standard of living. Artificial intelligence (AI) and ambient intelligence (AmI) are inextricably linked as intelligence is the ability to gain new information and employ it in novel contexts. The ambience is what accompanies us, while artificial represents something developed by humans. Wearable technologies are being designed to recognize FOG and support patients in the beginning to walk again via periodic cueing. The article proposes a unique automated approach for action description that utilizes AI to carry out a non-intrusive, markerless evaluation in real-time and with full robotics. This computerized method accelerates detection and safeguards from human error. Despite significant improvements brought about by the advent of novel technologies, the available assessment platforms still fail to strike the ideal equilibrium among expenditure, diagnostic precision, velocity, and simplicity. The value of the recommended approach can be seen through a comparison of the gait parameters collected by each of the motion-tracking gadgets.

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12. **Resting state changes in aging and Parkinson's disease are shaped by underlying neurotransmission - a normative modeling study.**

Authors: Kasper, J.;Caspers, S.;Lotter, L. D.;Hoffstaedter, F.;Eickhoff, S. B. and Dukart, J.

Publication Date: 2023

Journal: bioRxiv (pagination), pp. ate of Pubaton: 20 Ot 2023

Abstract: Human healthy and pathological aging is linked to a steady decline in brain resting state activity and connectivity measures. The neurophysiological mechanisms underlying these changes remain poorly understood. Making use of recent developments in normative modeling and availability of in vivo maps for various neurochemical systems, we test in the UK Biobank cohort (N=25,917) if and how age- and Parkinson's disease related resting state changes in commonly applied local and global activity and connectivity measures co-localize with underlying neurotransmitter systems. We find the distributions of several major neurotransmitter systems including serotonergic, dopaminergic, noradrenergic and glutamatergic neurotransmission to explain age-related changes as observed across functional activity and connectivity measures. Co-localization patterns in Parkinson's disease deviate from normative aging trajectories for these, as well as for cholinergic and GABAergic neurotransmission. The deviation from normal co-localization of brain function and GABAa correlates with disease duration. These findings provide new insights into molecular mechanisms underlying age- and Parkinson's related brain functional changes. Combining normative modeling and neurotransmitter mapping may aid future research and drug development through deeper understanding of neurophysiological mechanisms underlying specific clinical conditions.

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13. **Effects of physical exercise interventions on cognitive function in Parkinson's disease: An updated systematic review and meta-analysis of randomized controlled trials.**

Authors: Kim, Ryul;Lee, Tae Lee;Lee, Hanall;Ko, Do-Kyung;Lee, Joon Ho;Shin, Heehyun;Lim, Dabin;Jun, Jin-Sun;Byun, Kyeongho;Park, Kiwon;Jeon, Beomseok and Kang, Nyeonju

Publication Date: Dec ,2023

Journal: Parkinsonism & Related Disorders 117, pp. 105908

Abstract: OBJECTIVE: To determine whether physical exercise interventions can improve cognitive function, including overall performance and specific domains, in patients with Parkinson's disease (PD) and to provide potential evidence on how cognitive benefits can be optimized by exercise prescriptions. METHODS: Using PubMed, Web of Science, and Cochrane Library (from inception to August 2022), four independent reviewers screened the search results and extracted data from randomized controlled

trials of physical exercise interventions in patients with PD with an outcome measure of cognitive function. Random-effects meta-analysis models were used to report standardized mean differences (SMDs) with 95 % confidence intervals (CIs). RESULTS: Twenty-one randomized controlled trials including 761 patients with PD were eligible for inclusion. Physical exercise interventions led to significant improvements in global cognitive function (SMD = 0.69; 95 % CI = 0.31 to 1.06; P

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14. **Perioperative Use of Intravenous Levodopa as an Anti-Parkinsonian Drug: A Propensity Score Analysis.**

Authors: Kodama, Satoshi;Jo, Taisuke;Yasunaga, Hideo;Ohbe, Hiroyuki;Michihata, Nobuaki;Matsui, Hiroki;Okada, Akira;Shirota, Yuichiro;Fushimi, Kiyohide;Toda, Tatsushi and Hamada, Masashi

Publication Date: Nov ,2023

Journal: Movement Disorders Clinical Practice 10(11), pp. 1650-1658

Abstract: Background: Perioperative discontinuation of oral anti-parkinsonian medication can negatively impact the prognosis of abdominal surgery in patients with Parkinson's disease. Although intravenous levodopa may be an alternative, its efficacy has not yet been investigated. Objectives: To determine the efficacy of intravenous levodopa as an alternative to oral anti-Parkinsonian drugs during gastric or colorectal cancer surgery. Methods: We identified patients with Parkinson's disease who underwent surgery for gastric or colorectal cancer between April 2010 and March 2020, using the Diagnosis Procedure Combination database, a nationwide inpatient database in Japan. Patients were divided into two groups: those who received intravenous levodopa during the perioperative period and those who did not. We compared in-hospital mortalities, major complications, and postoperative length of stay between the groups after adjusting for background characteristics with overlap weights based on propensity scores. Results: We identified 648 patients who received intravenous levodopa and 1207 who did not receive levodopa during the perioperative period. In the adjusted cohort, the mean postoperative length of stay was 24.7 and 29.0 days (percent difference, -7.7%; 95% confidence interval, -13.1 to -1.5); in-hospital death was 3.2% and 3.3% (adjusted odds ratio, 0.95; 95% CI: 0.54-1.67); and incidence of major complications were 21.4% and 19.3% (adjusted odds ratio, 0.89; 95% confidence interval, 0.70-1.13) in those with and without intravenous levodopa, respectively. Conclusions: Intravenous levodopa was associated with a shorter postoperative length of stay, but not with mortality or morbidity. Intravenous levodopa may improve perioperative care in patients with Parkinson's disease. Copyright © 2023 The Authors. Movement Disorders Clinical Practice published by Wiley Periodicals LLC on behalf of International Parkinson and Movement Disorder Society.

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15. **Updates in Parkinson's Disease Integrative Therapies: an Evidence-Based Review**

Authors: Kola, Sushma and Subramanian, Indu

Publication Date: Nov ,2023

Journal: Current Neurology & Neuroscience Reports 23(11), pp. 717-726

Abstract: PURPOSE OF REVIEW: This review summarizes recent evidence-based integrative therapies for Parkinson's disease (PD) that may improve motor and non-motor symptoms, enhance quality of life, and alter disease progression. RECENT FINDINGS: Imaging studies have demonstrated that aerobic exercise changes brain structure and function, while strength training improves posture and balance. Loneliness is associated with worsening PD severity, but social prescribing and cognitive behavioral therapy may effectively foster connections. Ayurvedic and traditional Chinese medicine practices including yoga, meditation, tai chi, and acupuncture may help improve mobility, mood, sleep, and quality of life. Art therapy enhances visuospatial skills, whereas music and dance therapy can alleviate freezing of gait. Several studies demonstrate successful use of these integrative strategies virtually, thereby improving patient accessibility and participation. PD management has broadened to include integrative approaches combining conventional and complementary therapies. Potential

benefits of movement, nutrition, sleep, socialization, and mind-body practices have been confirmed with several recent randomized controlled trials.

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16. **The Self-Administered Screening Questionnaire for Parkinson's Disease-Associated Psychosis (SASPAP).**

Authors: Koneru, Vindhya;Espay, Alberto J.;Cole, Allan J.;Weintraub, Daniel;Crist, Kathleen;Pascual, Maria B. and Ondo, William G.

Publication Date: Nov ,2023

Journal: Movement Disorders 38(11), pp. 1982-1987

Abstract: BACKGROUND: Psychosis is a common manifestation of Parkinson's disease (PD), and a major source of caregiver burden, nursing home placement, and mortality. Psychosis symptoms are often not volunteered during the clinic visit because of embarrassment or lack of insight, and there is no validated screening scale. We compare a new self-administered psychosis screening questionnaire against the Parkinson's Disease Psychosis Scale (PDPS) and physician interview as the gold standard assessments. OBJECTIVE: To create and validate the Self-Administered Screening Questionnaire for PD-Associated Psychosis (SASPAP). METHODS: The questionnaire was developed through a modified Delphi method by a committee of two neurologists, a psychiatrist, a patient, and patient advocate and underwent several rounds of revisions, including patient beta-testing. It was provided by staff at intake to 250 consecutive patients diagnosed with PD, at the Methodist Hospital Movement Disorders Clinic, and separately to their caregivers when available. Later, the PDPS and a general psychosis interview were administered by PD specialists without knowledge of the screening questionnaire responses. RESULTS: Two hundred and fifty consecutive patients with PD (mean age, 68.6 +/- 7.0; mean age of PD onset, 62.7 +/- 10.5 years; 35.2% female) were included. The screening questionnaire was positive for psychosis (any of the four questions positive) in 33.6% of patients. Compared to the gold standard, the SASPAP sensitivity was 87.8% and the specificity 92.3%. CONCLUSION: This four-question self-administered screening questionnaire for PD psychosis demonstrated high diagnostic accuracy compared with the gold standard assessments and can be self-completed at visit intake. © 2023 International Parkinson and Movement Disorder Society. Copyright © 2023 International Parkinson and Movement Disorder Society.

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17. **The Landscape of Monogenic Parkinson's Disease in Populations of Non-European Ancestry: A Narrative Review**

Authors: Koros, Christos;Bougea, Anastasia;Simitsi, Athina Maria;Papagiannakis, Nikolaos;Angelopoulou, Efthalia;Pachi, Ioanna;Antonelou, Roubina;Bozi, Maria;Stamelou, Maria and Stefanis, Leonidas

Publication Date: Nov 17 ,2023

Journal: Genes (Basel) 14(11)

Abstract: INTRODUCTION: There has been a bias in the existing literature on Parkinson's disease (PD) genetics as most studies involved patients of European ancestry, mostly in Europe and North America. Our target was to review published research data on the genetic profile of PD patients of non-European or mixed ancestry. METHODS: We reviewed articles published during the 2000-2023 period, focusing on the genetic status of PD patients of non-European origin (Indian, East and Central Asian, Latin American, sub-Saharan African and Pacific islands). RESULTS: There were substantial differences regarding monogenic PD forms between patients of European and non-European ancestry. The G2019S Leucine Rich Repeat Kinase 2 (LRRK2) mutation was rather scarce in non-European populations. In contrast, East Asian patients carried different mutations like p.I2020T, which is common in Japan. Parkin (PRKN) variants had a global distribution, being common in early-onset PD in Indians, in East Asians, and in early-onset Mexicans. Furthermore, they were occasionally present in Black

African PD patients. PTEN-induced kinase 1 (PINK1) and PD protein 7 (DJ-1) variants were described in Indian, East Asian and Pacific Islands populations. Glucocerebrosidase gene variants (GBA1), which represent an important predisposing factor for PD, were found in East and Southeast Asian and Indian populations. Different GBA1 variants have been reported in Black African populations and Latin Americans. CONCLUSIONS: Existing data reveal a pronounced heterogeneity in the genetic background of PD. A number of common variants in populations of European ancestry appeared to be absent or scarce in patients of diverse ethnic backgrounds. Large-scale studies that include genetic screening in African, Asian or Latin American populations are underway. The outcomes of such efforts will facilitate further clinical studies and will possibly contribute to the identification of either new pathogenic mutations in already described genes or novel PD-related genes.

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18. **Association of accelerometer-measured physical activity intensity, sedentary time, and exercise time with incident Parkinson's disease.**

Authors: Liu, Mengyi;Gan, Xiaoqin;Ye, Ziliang;Zhang, Yuanyuan;He, Panpan;Zhou, Chun;Yang, Sisi;Zhang, Yanjun and Qin, Xianhui

Publication Date: Nov 28 ,2023

Journal: Npj Digital Medicine 6(1), pp. 224

Abstract: Evidence regarding the association between physical activity and Parkinson's disease (PD) risk is generally limited due to the use of self-report questionnaires. We aimed to quantify the separate and combined effects of accelerometer-measured light physical activity (LPA), moderate-to-vigorous physical activity (MVPA), sedentary time and exercise timing with incident PD. 96,422 participants without prior PD and with usable accelerometer data were included from UK Biobank. Time spent in sedentary activity, LPA, MVPA, and exercise timing were estimated using machine learning models. The study outcome was incident PD. Over a median follow-up duration of 6.8 years, 313 participants developed PD. There was a L-shaped association for LPA and MVPA, and a reversed L-shaped association for sedentary time, with the risk of incident PD (all P for nonlinearity =9.41 h/day) (adjusted HR, 5.59; 95% CI: 4.10-7.61), and those with both low MVPA and high sedentary time (adjusted HR, 3.93; 95% CI: 2.82-5.49) had the highest risk of incident PD. In conclusion, regardless of exercise timing (morning, midday-afternoon, and evening), there was an inverse association for accelerometer-measured MVPA and LPA, and a positive association for sedentary time, with incident PD. Copyright © 2023. The Author(s).

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19. **Rehabilitation for non-motor symptoms for patients with Parkinson's disease from an alpha-synuclein perspective: a narrative review.**

Authors: Liu, Zhaoyang;Lemus, Jessica;Smirnova, Irina V. and Liu, Wen

Publication Date: 2023

Journal: Exploration of Neuroprotective Therapy 3(4), pp. 235-257

Abstract: Parkinson's disease (PD) is a common neurodegenerative disorder affecting aged population around the world. PD is characterized by neuronal Lewy bodies present in the substantia nigra of the midbrain and the loss of dopaminergic neurons with various motor and non-motor symptoms associated with the disease. The protein alpha-synuclein has been extensively studied for its contribution to PD pathology, as alpha-synuclein aggregates form the major component of Lewy bodies, a hallmark of PD. In this narrative review, the authors first focus on a brief explanation of alpha-synuclein aggregation and circumstances under which aggregation can occur, then present a hypothesis for PD pathogenesis in the peripheral nervous system (PNS) and how PD can spread to the central nervous system from the PNS via the transport of alpha-synuclein aggregates. This article presents arguments both for and against this hypothesis. It also presents various non-pharmacological rehabilitation approaches and management techniques for both motor and non-motor symptoms of PD and the related pathology. This review seeks to examine a possible hypothesis of PD pathogenesis

and points to a new research direction focus on rehabilitation therapy for patients with PD. As various non-motor symptoms of PD appear to occur earlier than motor symptoms, more focus on the treatment of non-motor symptoms as well as a better understanding of the biochemical mechanisms behind those non-motor symptoms may lead to better long-term outcomes for patients with PD.

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20. **Do patients with neurological disorders benefit from immersive virtual reality? A scoping review on the emerging use of the computer-assisted rehabilitation environment.**

Authors: Maggio, M. G.;Cezar, R. P.;Milardi, D.;Borzelli, D.;DE Marchis C.;D'Avella, A.;Quartarone, A. and Calabro, R. S.

Publication Date: 2023

Journal: European Journal of Physical and Rehabilitation Medicine (pagination), pp. ate of Pubaton: 16 No 2023

Abstract: INTRODUCTION: Virtual reality (VR) is an advanced technology that creates simulated environments and conditions. By offering the possibility of combining motor, cognitive, and well-being in conjunction with the potential to manipulate multi-sensorial features in a safe environment, VR has emerged as a promising powerful rehabilitation tool. Among advanced VR systems, various authors have highlighted promising effects in the rehabilitation of the computer-assisted rehabilitation environment (CAREN - Motekforce Link; Amsterdam, The Netherlands). In our scoping review, we aimed to map the existing evidence on the use of CAREN in the rehabilitation of neurological patients. EVIDENCE ACQUISITION: This scoping review was conducted following the PRISMA guidelines. A search was carried out for all peer-reviewed articles published until June 30, 2023, using the following databases: PubMed, Embase, Cochrane Database, PeDro and Web of Science. The following terms have been used: ("Cognitive Rehabilitation" OR "Motor Rehabilitation" OR "CAREN" or "Computer-Assisted Rehabilitation Environment") AND ("Virtual Reality" OR "Rehab"). EVIDENCE SYNTHESIS: From the assessed studies, only seven met the inclusion criteria: 1) one study concerned cognitive rehabilitation in patients suffering from Parkinson's Disease (PD); 2) one was on the usability of CAREN in PD patients; 3) two studies related to the influence of emotional components to CAREN rehabilitation; 4) three studies were related to motor rehabilitation using CAREN, and involved individuals with PD, Multiple Sclerosis, TBI, respectively. Generally, the few assessed studies demonstrate that CAREN is a safe and potentially effective tool to treat different symptoms (including gait and vestibular disturbances, executive function, depressive mood, and anxiety) in patients with different neurological disorders. CONCLUSION(S): The reviewed literature indicated the potential use of CAREN in improving motor and cognitive skills with conflicting results on emotional aspects. However, since the data comes from few and small sample size studies, further research is needed to confirm the effectiveness of the tool in neurorehabilitation.

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21. **Effect of dancing on freezing of gait in patients with Parkinson's disease: A systematic review and meta-analysis**

Authors: Mahmoud, Hayam Mahmoud;Al-Turkistani, Zenab Ibrahim;Alayat, Mohamed Salaheldien;Abd El-Kafy, Ehab Mohamed and El Fiky, Amir Abdel Raouf

Publication Date: 2023

Journal: Neurorehabilitation 53(3), pp. 269-284

Abstract: BACKGROUND: Freezing of gait (FOG) is one of the major debilitating motor symptoms that affect Parkinson's disease (PD) patients' gait,OBJECTIVE:To investigate the effect of dancing on FOG, motor symptoms, and balance in patients with Parkinsonism. METHODS: Eight databases were searched for full-text English randomized control trials (RCTs). The freezing of gait (FOG) was the primary outcome while the balance and Unified Parkinson Disease Rating Scale (UPDRS-3) were the secondary outcomes. Methodological quality was evaluated by the Physiotherapy Evidence Database (PEDro) scale. Level of evidence was assessed by Grading of Recommendations Assessment,

Development and Evaluation (GRADE) system. A random-effect model of meta-analysis was used to calculate the standardized mean difference (SMD) at a 95% confidence interval (CI), and the effect size. RESULTS: A total of nine studies (263 patients) were included. Qualitative data related to participants, dancing type, measured outcomes, and follow-up were extracted. PEDro scale showed one fair-quality and eight high-quality studies. GRADE showed a low to very low level of evidence with moderate effect size on both UPDRS (SMD -70 [-1.04, -0.36]) and Balance (SMD 0.35 [0.08, 0.63]). CONCLUSION: Dance is an effective modality on improving UPDRS and balance with small effect on FOG. Further high-quality studies with high-quality of evidence are recommended to increase the confidence to the effect estimate and support the finding results.

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22. **Risk of Suicidal Ideation and Behavior in Individuals With Parkinson Disease: A Systematic Review and Meta-Analysis.**

Authors: Mai, A. S.;Chao, Y.;Xiao, B.;Zhou, Z.;Yong, J. H.;Lee, A. R. Y. B. and Tan, E. K.

Publication Date: 2023

Journal: JAMA Neurology (pagination), pp. ate of Pubaton: 13 No 2023

Abstract: Importance: Suicide risk may be increased in patients with Parkinson disease (PD), a common neurodegenerative condition. Mood disorders, especially depression, are prevalent in patients with PD who report suicidality. Objective(s): To address inconsistent results from studies of suicidal ideation and behavior in patients with PD. Data Sources: The study team searched MEDLINE and Embase from inception to June 14, 2023, and further screened the bibliographies of relevant studies to ensure a comprehensive search. Study Selection: Original studies, published in English, discussing either suicidal ideation, behavior, or both in adults with PD were included. Accepted study designs included cross-sectional, case-control, and cohort studies. Studies that only included patients with PD after deep brain stimulation were excluded. Data Extraction and Synthesis: This meta-analysis was conducted in line with the PRISMA guidelines. Two authors reviewed each study and extracted the data independently, with discrepancies referred to a third independent author. Main Outcomes and Measures: Outcomes included the prevalence of suicidal ideation and behavior, measured as proportions, and the risk of suicidal behavior in patients with PD relative to controls, measured in both odds ratio (OR) and hazards ratio (HR). Result(s): A total of 28 studies comprising 505950 PD patients were included in the final analysis. The prevalence of suicidal ideation was evaluated in 14 studies (22.2%; 95% CI, 14.6-32.3) and suicidal behavior in 21 studies (1.25%; 95% CI, 0.64-2.41). Excluding 4 outliers, prevalence of suicidal behavior was significantly higher in prospective studies (1.75%; 95% CI, 1.03-2.95) than retrospective studies (0.50%; 95% CI, 0.24-1.01). Excluding 1 outlier, OR of suicidal behavior was pooled across 10 studies and significant (OR, 2.15; 95% CI, 1.22-3.78; P=.01). HR of suicidal behavior was assessed in 9 studies (HR, 1.73; 95% CI, 1.40-2.14; PResult(s): A total of 28 studies comprising 505950 PD patients were included in the final analysis. The prevalence of suicidal ideation was evaluated in 14 studies (22.2%; 95% CI, 14.6-32.3) and suicidal behavior in 21 studies (1.25%; 95% CI, 0.64-2.41). Excluding 4 outliers, prevalence of suicidal behavior was significantly higher in prospective studies (1.75%; 95% CI, 1.03-2.95) than retrospective studies (0.50%; 95% CI, 0.24-1.01). Excluding 1 outlier, OR of suicidal behavior was pooled across 10 studies and significant (OR, 2.15; 95% CI, 1.22-3.78; P=.01). HR of suicidal behavior was assessed in 9 studies (HR, 1.73; 95% CI, 1.40-2.14; PConclusions and Relevance: This meta-analysis involving more than 500000 patients with PD found 22.2% and 1.25% of patients with PD to have suicidal ideation and behavior, respectively. Patients with PD had 2 times the risk of suicidal behavior than controls. Early recognition and management of suicidality in PD can help reduce mortality.

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23. **Physical exercise and its effects on people with Parkinson's disease: Umbrella review**

Authors: Padilha, Cristiano;Souza, Renan;Grossl, Fernando Schorr;Gauer, Ana Paula Maihack;de Sa, Clodoaldo Antonio and Rodrigues-Junior, Sinval Adalberto

Publication Date: 2023

Journal: PLoS ONE [Electronic Resource] 18(11), pp. e0293826

Abstract: INTRODUCTION: Parkinson's disease is neurodegenerative, complex and progressive, manifesting in a slow and irreversible way. Physical exercise has been proposed as therapeutic alternative to people with Parkinson's disease. OBJECTIVE: To synthesize knowledge about the effects of physical exercise on people with Parkinson's Disease as presented by published systematic reviews. METHODS: Nine electronic databases and two grey literature databases were searched for systematic reviews reporting the effects of physical exercises on people with Parkinson's Disease. Searches involved a two-phase process, by, at least, two independent reviewers. Methodological quality of the included systematic reviews was assessed using AMSTAR-2. RESULTS: From 2,122 systematic reviews, 139 were included. Motor outcomes were assessed in 91% of the studies, with balance being the most studied. Non-motor outcomes were assessed in 68% of the studies, with emphasis on quality of life. Physical exercises were classified into five categories: aerobic exercises, strength, combined, sensorimotor activities and other activity protocols. Findings of the systematic reviews suggest that all exercise categories can be prescribed to improve balance and mobility, while combined exercises, strength, and specific activities improve both motor and non-motor outcomes, and aerobic exercise and sensorimotor activities improve motor outcomes. CONCLUSION: Current evidence from systematic reviews suggests that physical exercises impacts both motor and non-motor outcomes in people with Parkinson's Disease. Limits in evidence provided by the systematic reviews were related to methodological issues and to the description of the interventions and must be considered to improve decision-making and clinical application.

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24. **Brain Networks Involved in Sensory Perception in Parkinson's Disease: A Scoping Review**

Authors: Permezel, Fiona;Alty, Jane;Harding, Ian H. and Thyagarajan, Dominic

Publication Date: Nov 06 ,2023

Journal: Brain Sciences 13(11)

Abstract: Parkinson's Disease (PD) has historically been considered a disorder of motor dysfunction. However, a growing number of studies have demonstrated sensory abnormalities in PD across the modalities of proprioceptive, tactile, visual, auditory and temporal perception. A better understanding of these may inform future drug and neuromodulation therapy. We analysed these studies using a scoping review. In total, 101 studies comprising 2853 human participants (88 studies) and 125 animals (13 studies), published between 1982 and 2022, were included. These highlighted the importance of the basal ganglia in sensory perception across all modalities, with an additional role for the integration of multiple simultaneous sensation types. Numerous studies concluded that sensory abnormalities in PD result from increased noise in the basal ganglia and increased neuronal receptive field size. There is evidence that sensory changes in PD and impaired sensorimotor integration may contribute to motor abnormalities.

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25. **Neuroimaging Techniques in Differentiating Parkinson's Disease from Drug-Induced Parkinsonism: A Comprehensive Review**

Authors: Pitton Rissardo, Jamir and Caprara, Ana Leticia Fornari

Publication Date: Nov 15 ,2023

Journal: Clinica Practica 13(6), pp. 1427-1448

Abstract: Neuroimaging can provide significant benefits in evaluating patients with movement disorders associated with drugs. This literature review describes neuroimaging techniques performed to distinguish Parkinson's disease from drug-induced parkinsonism. The dopaminergic radiotracers

already reported to assess patients with drug-induced parkinsonism are [123I]-FP-CIT, [123I]-beta-CIT, [99mTc]-TRODAT-1, [18F]-DOPA, [18F]-AV-133, and [18F]-FP-CIT. The most studied one and the one with the highest number of publications is [123I]-FP-CIT. Fludeoxyglucose (18F) revealed a specific pattern that could predict individuals susceptible to developing drug-induced parkinsonism. Another scintigraphy method is [123I]-MIBG cardiac imaging, in which a relationship between abnormal cardiac imaging and normal dopamine transporter imaging was associated with a progression to degenerative disease in individuals with drug-induced parkinsonism. Structural brain magnetic resonance imaging can be used to assess the striatal region. A transcranial ultrasound is a non-invasive method with significant benefits regarding costs and availability. Optic coherence tomography only showed abnormalities in the late phase of Parkinson's disease, so no benefit in distinguishing early-phase Parkinson's disease and drug-induced parkinsonism was found. Most methods demonstrated a high specificity in differentiating degenerative from non-degenerative conditions, but the sensitivity widely varied in the studies. An algorithm was designed based on clinical manifestations, neuroimaging, and drug dose adjustment to assist in the management of patients with drug-induced parkinsonism.

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26. **Ketogenic therapies in Parkinson's disease, Alzheimer's disease, and mild cognitive impairment: An integrative review**

Authors: Price, Susan and Ruppar, Todd M.

Publication Date: Dec ,2023

Journal: Applied Nursing Research 74, pp. 151745

Abstract: BACKGROUND: Ketogenic therapies have shown benefit for seizure reduction in epilepsy but their impact on other neurologic conditions is less known. In this literature review, the efficacy of ketogenic therapies were assessed in Parkinson's disease (PD), Alzheimer's disease (AD), and mild cognitive impairment (MCI). METHODS: A literature search was conducted using PubMed, Scopus, and Google Scholar focusing on ketogenic therapies in PD, AD, and MCI. RESULTS: A total of 2565 records were identified with a total of 15 studies (3 for PD and 12 for MCI/AD) meeting criteria for analysis. The ketogenic diet was used in all the PD studies and did show significant improvement in motor function either through vocal quality, gait, freezing, tremor, and/or balance. A variety of ketogenic therapies were utilized in the MCI and AD groups including a ketogenic diet, low-carbohydrate diet, modified Adkins diet, Mediterranean diet with coconut oil supplementation, a ketogenic diet with a ketogenic medium chain triglyceride (kMCT) supplement, as well as ketogenic supplements including a ketogenic drink with kMCT, oral ketogenic compounds (Axona and AC-1202), and MCT oil or emulsion. The ketogenic diet independently showed a non-significant trend towards improvement in cognition. The Mediterranean diet, modified Adkins diet, and low-carbohydrate diet showed statistically significant improvements in some, although not all, of their cognitive measures. Use of ketogenic supplements, drinks, or compounds showed variable results in the AD and MCI groups. The Axona and AC-1202 compounds showed no significant improvement in cognition at the end of their respective 90-day trials. Most MCT supplements did show cognitive improvements, although only after 6 months of adherence. Adherence to the intervention was problematic in most of the diet studies. CONCLUSION: Ketogenic therapies have promise in PD, AD, and MCI for symptom improvement although larger studies are needed to support their implementation in clinical practice. Copyright © 2023. Published by Elsevier Inc.

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27. **An audit of the inpatient management of Parkinson's Disease medication in a level four hospital in 2019**

Authors: Reidy, C., Farrell, T., Naylor, C., Pope, G., Cooke, J., Bambrick, P., Mello, S., O'Regan, N. and Mulcahy, R.

Publication Date: 2023

Publication Details: Age and Ageing. Conference: 70th Annual and Scientific Meeting of the Irish Gerontological Society. Galway Ireland. 52(Supplement 3) (pp iii49); Oxford University Press,

Abstract: Background: Parkinson'sDisease (PD) is a progressive, complex neurodegenerative disease characterised by both motor and non-motor symptoms. PD medications are time sensitive, and their correct prescription and administration are crucial in optimal management strategies. Previous work presented at the Irish Gerontological Society showed a lack of knowledge regarding PDand itsmedications among healthcare staff in a level four hospital. Method(s): Data were collected from a retrospective chart analysis of PD admissions in 2019. 115 admissions coded PD were identified from HIPE data. Subsequently, 10 patients were randomly selected from medical, surgical, and orthopaedic admissions respectively (39 admissions). Patients were excluded if they were not on PD-specific medications or if their drug Kardex was not available. 28 patient Kardex's were reviewed. Data was collected using a predetermined spreadsheet and analysed using Microsoft Excel. Result(s): 100% of patients were on levodopa medication. 86% of patients did not receive their appropriate PD medications in the Emergency department. 21% had errors in medication prescription (omitted drug [n=4, 14%], incorrect timings [n=2, 7%]) on admission. 75% missed at least one dose of levodopa. 83 doses of levodopa were missed across the 28 admissions. 40% were because the patient was nil by mouth (NPO), while 21% had no reason documented. 64% of patients had doses of levodopa delayed by more than 1 hour, with over 80% of these in the perioperative period. 5 patients (18%) received antidopaminergic drugs. Conclusion(s): This review highlighted multiple shortcomings in PD medication management during acute admissions. We introduced hospital guidelines for the management of patients with PD while NPO. This guideline includes information on alternatives to oral route, advice regarding the perioperative period, and medications to avoid. It has been approved by the Medications and Therapeutics committee and will be introduced with education sessions at the changeover. We will reaudit practices after 6 months.

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28. **Sleep disturbances as risk factors for neurodegeneration later in life.**

Authors: Simmonds, Emily;Levine, Kristin S.;Han, Jun;Iwaki, Hirotaka;Koretsky, Mathew J.;Kuznetsov, Nicole;Faghri, Faraz;Solsberg, Caroline Warly;Schuh, Artur;Jones, Lietsel;Bandres-Ciga, Sara;Blauwendraat, Cornelis;Singleton, Andrew;Escott-Price, Valentina;Leonard, Hampton L. and Nalls, Mike A.

Publication Date: 2023

Journal: MedRxiv : The Preprint Server for Health Sciences

Abstract: The relationship between sleep disorders and neurodegeneration is complex and multi-faceted. Using over one million electronic health records (EHRs) from Wales, UK, and Finland, we mined biobank data to identify the relationships between sleep disorders and the subsequent manifestation of neurodegenerative diseases (NDDs) later in life. We then examined how these sleep disorders' severity impacts neurodegeneration risk. Additionally, we investigated how sleep attributed risk may compensate for the lack of genetic risk factors (i.e. a lower polygenic risk score) in NDD manifestation. We found that sleep disorders such as sleep apnea were associated with the risk of Alzheimer's disease (AD), amyotrophic lateral sclerosis, dementia, Parkinson's disease (PD), and vascular dementia in three national scale biobanks, with hazard ratios (HRs) ranging from 1.31 for PD to 5.11 for dementia. These sleep disorders imparted significant risk up to 15 years before the onset of an NDD. Cumulative number of sleep disorders in the EHRs were associated with a higher risk of neurodegeneration for dementia and vascular dementia. Sleep related risk factors were independent of genetic risk for Alzheimer's and Parkinson's, potentially compensating for low genetic risk in overall disease etiology. There is a significant multiplicative interaction regarding the combined risk of sleep disorders and Parkinson's disease. Poor sleep hygiene and sleep apnea are relatively modifiable risk factors with several treatment options, including CPAP and surgery, that could potentially reduce the risk of neurodegeneration. This is particularly interesting in how sleep related risk factors are significantly and independently enriched in manifesting NDD patients with low levels of genetic risk factors for these diseases.

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29. **Depression in Patients With Parkinson's Disease: A Hospital-Based Cross-Sectional Study.**

Authors: Sujith, Priya;Arjunan, Porkodi;Iype, Thomas and Natarajan, Venkatesh

Publication Date: Oct ,2023

Journal: Cureus 15(10), pp. e47214

Abstract: INTRODUCTION: Depression, a common non-motor symptom in Parkinson's disease (PD), is often underdiagnosed and can significantly impact the quality of life (QOL) and treatment outcomes. Specific disease-related factors and non-specific factors may contribute to depression, and these factors should be identified early to plan the appropriate interventions that promote positive mood. The study aimed to assess the prevalence of depression in PD patients and to find out the factors associated with depression among patients with PD attending the neurology OPD of a tertiary care teaching hospital in Trivandrum. METHODS: A cross-sectional study was conducted at the neurology OPD of Government Medical College Hospital, Trivandrum, from December 2021 to February 2023. We included patients with PD diagnosed according to the United Kingdom PD Society Brain Bank criteria. We collected data from 220 patients with PD by interview technique. Hospital Anxiety and Depression Scale (HADS) was used to assess depression and anxiety in this study. Staging and the severity of the motor symptoms were assessed using the Hoehn and Yahr scale and the Movement Disorder Society Unified Parkinson's Disease Rating Scale Part III (MDS UPDRS Part III), respectively. RESULTS: Among 220 patients with PD, 31.8% (95% CI: 4.36-5.40) had depression. The non-specific variables, such as education, living arrangements, and gender, and disease-specific variables, such as the severity of motor symptoms (MDS UPDRS Part III score) and the Hoehn and Yahr staging of PD, had a statistically significant association with depression. Logistic regression analysis showed that the severity of motor symptoms (OR=2.69, p=0.004)) and female gender (OR=1.830, p= 0.05) were the independent factors associated with depression. CONCLUSION: Depression is a common non-motor symptom of PD that is often underdiagnosed and undertreated and can significantly impact the QOL of patients and their caregivers. Hence, it should be identified early and managed by pharmacological and non-pharmacological strategies. Copyright © 2023, Sujith et al.

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30. **Parkinson's disease physical therapy services during COVID-19: A phenomenological study.**

Authors: Tham, A. Y. Z.;Harrison, E. and Farlie, M. K.

Publication Date: 2023

Journal: Australasian Journal on Ageing (pagination), pp. ate of Pubaton: 21 No 2023

Abstract: OBJECTIVES: Parkinson's disease (PD) is the most rapidly increasing movement disorder globally. Physical therapies improve the motor and non-motor symptoms of PD. During the COVID-19 pandemic, telehealth was the primary method of physical therapy service adaptation in response to restrictions preventing in-person therapy attendance. This study explores the perspectives of people with PD and their therapists who experienced physical therapy service delivery before and during the COVID-19 pandemic in Melbourne, Australia. METHOD(S): A phenomenological study that purposively recruited patients and therapists from a movement disorders service at an outer metropolitan rehabilitation hospital. Participants completed in-depth interviews, and data were analysed using reflexive thematic analysis. RESULT(S): Ten people with PD and five therapists completed interviews. Six themes were identified: patients value access to therapy, a key mechanism is trust, an opportunity to empower patients, ticking boxes for telehealth, contrasting experiences of telehealth and something is better than nothing. CONCLUSION(S): This study explored the experiences of people with PD and their therapists by contrasting their prepandemic and in-pandemic experiences. People with PD valued telehealth access during the pandemic, but extra support was initially required to use telehealth successfully. Empowering aspects of telehealth included patients learning new skills and self-management strategies from telehealth interactions with therapists. Therapists at this health service were motivated to continue with telehealth beyond the pandemic. Despite finding it challenging initially, they were surprised by how well people with PD managed telehealth using locally developed procedures based on clinical judgement and staff training that addressed patient safety while supporting people with PD to utilise telehealth.Copyright © 2023 The Authors. Australasian Journal on

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