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Parkinson's Disease

Current Awareness Bulletin

December 2011

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Jason Ovens
Library & Knowledge Service Manager

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References from the Cochrane Library

Title: Anti-hypertensive drugs as disease-modifying agents for Parkinson's disease: evidence from observational studies and clinical trials.

Citation: Cochrane Database of Systematic Reviews, 01 November 2011, vol./is. /11(0-), 1469493X

Author(s): Rees K, Stowe R, Patel S, Ives N, Breen K, Ben-Shlomo Y, Clarke CE

Abstract: Background:, Current treatment for Parkinson's disease (PD) is focused on relieving symptoms, at present there is nothing that is widely accepted to halt or slow disease progression. Potential neuroprotective or disease modifying agents have been identified from preclinical studies. One such group of compounds are anti-hypertensive drugs., Objectives:, 1)Do anti-hypertensive drugs prevent the onset of PD? (primary prevention), 2)Are anti-hypertensive drugs disease modifying agents in PD, do they slow the progression of disease once PD is established? (secondary prevention), 3)What are the adverse effects of taking anti-hypertensive drugs for patients with PD?, Search strategy:, Electronic databases including trial registers were searched, complemented with handsearching of conference proceedings and searching the citations of key articles (updated May 2011). Authors were contacted, to provide additional information, where necessary., Selection criteria:, For the primary prevention review, primary prevention trials and observational studies (cohort and case control studies) were sought. Participants were free of PD when exposure to anti-hypertensive drugs was assessed. For the secondary prevention review, clinical trials in patients with well defined PD were sought. Two people independently selected studies for inclusion using predetermined criteria., Data collection and analysis:, Data were abstracted from the source papers and methodological quality was assessed independently by two review authors. Results for both reviews were dealt with descriptively., Main results:, Two cohort studies and four case control studies met the inclusion criteria for the primary prevention review. The two cohort studies found no effect of exposure to calcium channel blockers on the risk of developing PD. Three case control studies looked at the effects of exposure to calcium channel blockers and beta blockers on the risk of developing PD but the assessment periods of exposure were markedly different prior to PD onset, and different subclasses of drugs were examined, so results were not comparable. A protective effect of centrally acting calcium channel blockers was found in one study., Two trials and one ongoing trial met the inclusion criteria for the secondary prevention review. Each completed trial examined a different class of anti-hypertensive drug. The ongoing trial is examining the effects of the calcium channel blocker isradipine on motor symptoms and disease progression. It follows an earlier tolerability study. The results are due in the year 2012., Adverse effects were noted in all included trials and included intolerability to the drugs and worsening PD symptoms., Authors' conclusions:, There is currently a lack of evidence for the use of antihypertensive drugs for either the primary or secondary prevention of PD. More observational studies are required to identify potential drugs to go forward for safety and tolerability studies in people with early PD. The results of the ongoing trial will help inform further research., [CINAHL Note: The Cochrane Collaboration systematic reviews contain interactive software that allows various calculations in the MetaView.]

Full Text:

Available in *fulltext* at Wiley

Title: Helicobacter pylori eradication for Parkinson's disease.

Citation: Cochrane Database of Systematic Reviews, 01 November 2011, vol./is. /11(0-), 1469493X

Author(s): Rees K, Stowe R, Patel S, Ives N, Breen K, Clarke CE, Ben-Shlomo Y

Abstract: Background:, Levodopa is the mainstay of treatment for alleviating the motor symptoms associated with Parkinson's disease. However, patients often experience fluctuations in their symptoms over time and 'wearing off' which may be partly related to variable absorption of the drug. There is some evidence that treatment of the common gastrointestinal infection Helicobacter pylori (H pylori) with antibiotics may improve levodopa absorption in the gut and hence improve symptoms., Objectives:, 1)What is the prevalence of H pylori in Parkinson's disease patients? 2)Does treatment of H pylori infection with antibiotics improve symptoms in Parkinson's disease patients? Is this effect dependent on improvements in the absorption of levodopa?, Search strategy:, We searched electronic databases (including CENTRAL, MEDLINE, EMBASE, PsycINFO and CINAHL) and trial registers, handsearched conference proceedings and carried out citation searching on key articles. All searching was updated in August 2009. We contacted authors to provide additional information where necessary., Selection criteria:, Clinical trials in patients with a well-defined definition of Parkinson's disease and who were H pylori-positive. Two people independently selected studies for inclusion using predetermined criteria. We used recruitment figures from clinical trials and other studies identified from the searching to determine the prevalence of H pylori in Parkinson's disease., Data collection and analysis:, Two authors abstracted data from the source papers and assessed methodological quality independently. We presented results descriptively., Main results:, Two completed and one ongoing clinical trial met the inclusion criteria. One trial (34 patients randomised) examined the effects of H pylori eradication on levodopa absorption and motor symptoms and found significant improvements in both. The ongoing trial has similar objectives and aims to recruit 100 patients. The other completed trial (20 patients analysed) sought to find a causal link between infection with H pylori and Parkinsonism and was non-contributory. A worsening of symptoms was noted with eradication failure., The prevalence of H pylori in Parkinson's disease was reported in four studies and ranged from 37% to 59% which is similar to that of the general population., Authors' conclusions:, There is currently a lack of evidence on the effects of screening and treating H pylori in patients with Parkinson's disease. There is limited evidence to suggest that H Pylori eradication improves the absorption of levodopa and improves motor symptoms. Results from an ongoing trial will inform the evidence base and will be incorporated in an update of this review. There is a need for well-conducted randomised controlled trials with standard outcome measures for motor symptoms and incorporating the costs of screening and treatment., [CINAHL Note: The Cochrane Collaboration systematic reviews contain interactive software that allows various calculations in the MetaView.]

Full Text:
Available in *fulltext* at Wiley

Title: Non-steroidal anti-inflammatory drugs as disease-modifying agents for Parkinson's disease: evidence from observational studies.

Citation: Cochrane Database of Systematic Reviews, 01 November 2011, vol./is. /11(0-), 1469493X

Author(s): Rees K, Stowe R, Patel S, Ives N, Breen K, Clarke CE, Ben-Shlomo Y

Abstract: Background:, Neuroinflammation may play a key role in the neurodegeneration associated with Parkinson's disease (PD). Non-steroidal anti-inflammatory drugs (NSAIDs) may be beneficial in the primary and secondary prevention of PD., Objectives:, 1)Do NSAIDs prevent the onset of PD?, 2)Are NSAIDs neuroprotective in PD - do they slow the progression of disease once PD is established?, 3)What are the adverse effects of taking NSAIDs in PD?, Search strategy:, We searched electronic databases, including trial registers, complemented with handsearching of conference proceedings and citation searching on key articles. All searching was updated in May 2011. We contacted authors to provide additional information where necessary., Selection criteria:, For the primary prevention review, we sought primary prevention trials and observational studies (cohort and case-control studies). Participants were free of PD when exposure to NSAIDs was assessed. For the secondary prevention review, we sought clinical trials in patients with a well-defined definition of PD. Two people independently selected studies for inclusion using predetermined criteria., Data collection and analysis:, Two review authors abstracted data from the source papers and assessed methodological quality independently. No studies met the inclusion criteria for the secondary prevention review. For the primary prevention review only observational studies were found. We combined data where appropriate using the inverse variance method. We assessed methodological quality using the Newcastle Ottawa Scales and by examining the period of exposure assessed prior to PD onset (or the index date in controls)., Main results:, Fourteen observational studies met the inclusion criteria for the primary prevention review (five cohort, nine case-control studies). Exposure to any NSAIDs or aspirin had no effect on the risk of developing PD. Exposure to non-aspirin NSAIDs reduced the risk of developing PD by 13% (effect estimate 0.87 (95% CI 0.73 to 1.04 - random-effects model), but this did not reach statistical significance. We found similar results for the most robust studies. Ibuprofen in isolation was examined in four studies and was associated with a 27% reduction in risk (effect estimate 0.73, 95% CI 0.63 to 0.85). There was a lack of information on adverse effects., Authors' conclusions:, There is currently no evidence for the use of NSAIDs in the secondary prevention of PD. Non-aspirin NSAIDs, particularly ibuprofen, may reduce the risk of developing PD. However, little is known of the effects of other individual drugs and at present no recommendations can be made regarding their use in primary prevention., [CINAHL Note: The Cochrane Collaboration systematic reviews contain interactive software that allows various calculations in the MetaView.]

Recent References from Amed (a database for AHPs)

Title: Comparison of virtual reality versus physical reality on movement characteristics of persons with Parkinson's disease: Effects of moving targets

Citation: Archives of Physical Medicine and Rehabilitation, August 2011, vol./is. 92/8(1238-45), 0003-9993 (2011 Aug)

Author(s): Wang CY, Hwang WJ, Fang JJ, Sheu CF, Leong IF, Ma HI

Title: Aquatic therapy versus conventional land-based therapy for Parkinson's disease: An open-label pilot study

Citation: Archives of Physical Medicine and Rehabilitation, August 2011, vol./is. 92/8(1202-10), 0003-9993 (2011 Aug)

Author(s): Vivas J, Arias P, Cudeiro J

Recent References from Cinahl (a worldwide database for nurses & AHPs)

Title: Anesthesia for deep brain stimulation.

Citation: Current Opinion in Anesthesiology, 01 October 2011, vol./is. 24/5(495-499), 09527907

Author(s): Venkatraghavan, Lashmi, Manninen, Pirjo

Abstract: PURPOSE OF REVIEW: Deep brain stimulation (DBS) is a well accepted treatment modality for many movement disorders such as Parkinson's disease and an increasing number of other functional neurological disorders like dystonias and epilepsy. This review will highlight the recent developments in our knowledge regarding the effects of anesthetic agents on neurophysiologic recording and anesthetic management of patients undergoing the insertion of a DBS. RECENT FINDINGS: There are new indications for DBS as well as new therapeutic target nuclei that are being examined. Better surgical technique and new imaging techniques like frameless stereotaxy are likely to improve patient tolerance of these procedures. The effects of anesthetic drugs on nuclei microelectrode recording and the need for an awake and cooperative patient for intraoperative macrostimulation testing continue to be the challenge for the anesthesiologist. Intracranial hemorrhage, seizures, and venous air embolism are the important perioperative complications needing urgent care. There are reports of increased incidence of postoperative behavioral and cognitive problems after DBS insertion. SUMMARY: There will continue to be an increase in the use of DBS for many neurological

and functional disorders, especially in the aging baby boomer population. Anesthetic technique will vary depending on the prevalent practice in individual institutions and requirements of the specific surgical procedure.

Title: Respiratory-swallowing coordination and swallowing safety in patients with Parkinson's disease.

Citation: Dysphagia (0179051X), 01 September 2011, vol./is. 26/3(218-224), 0179051X

Author(s): Troche, Michelle, Huebner, Irene, Rosenbek, John, Okun, Michael, Sapienza, Christine

Language: English

Abstract: The purpose of this study was to determine if individuals with Parkinson's disease (PD) demonstrate abnormal respiratory events when swallowing thin liquids. In addition, this study sought to define associations between respiratory events, swallowing apnea duration, and penetration-Saspiration (P--A) scale scores. Thirty-nine individuals with PD were administered ten trials of a 5-ml thin liquid bolus. P--A scale score quantified the presence of penetration and aspiration during the swallowing of a 3-oz sequential bolus. Participants were divided into two groups based on swallowing safety judged during the 3-oz sequential swallowing: Group 1 = P--A </= 2; Group 2 = P--A >/= 3. Swallows were examined using videofluoroscopy coupled with a nasal cannula to record respiratory signals during the event(s). Findings indicated that expiration was the predominant respiratory event before and after swallowing apnea. The data revealed no differences in our cohort versus the percentages of post-swallowing events reported in the literature for healthy adults. In addition, individuals with decreased swallowing safety, as measured by the P--A scale, were more likely to inspire after swallows and to have shorter swallowing apnea duration. Individuals who inspired before swallow also had longer swallowing apnea duration. The occurrence of inspiratory events after a swallow and the occurrence of shorter swallowing apnea durations may serve as important indicators during clinical swallowing assessments in patients at risk for penetration or aspiration with PD.

Title: Impaired food transportation in Parkinson's disease related to lingual bradykinesia.

Citation: Dysphagia (0179051X), 01 September 2011, vol./is. 26/3(250-255), 0179051X

Author(s): Umemoto, George, Tsuboi, Yoshio, Kitashima, Akio, Furuya, Hirokazu, Kikuta, Toshihiro

Abstract: This study aimed to analyze quantitatively videofluoroscopic (VF) images of patients with Parkinson's disease (PD), to evaluate if the predicted factors of the oral phase of swallowing deteriorated with PD progression, and to demonstrate a relationship between the abnormal movements of the tongue and food transportation. Thirty PD patients were recruited and divided into mild/moderate (Hoehn & Yahr stages II and III)

and advanced (stages IV and V) groups. They underwent measurement of tongue strength and VF using 5 ml of barium gelatin jelly as a test food. We measured the speed of bolus movement and the range of tongue and mandible movements during oropharyngeal transit time. The maximum tongue pressure of the mild/moderate group was significantly larger than that of advanced group (p = 0.047). The oropharyngeal transit time of the mild/moderate group was significantly shorter than that of the advanced group (p = 0.045). There was a significant negative correlation between the speed of tongue movement and the oropharyngeal transit time (p = 0.003, R = -0.527). Prolonged mealtimes and the ejection of insufficiently masticated food from the oral cavity into oropharynx were associated with PD progression. These results indicate the importance of the oral phase of swallowing in PD patients.

Title: Using Voluntary Cough to Detect Penetration and Aspiration During Oropharyngeal Swallowing in Patients with Parkinson Disease.

Citation: Dysphagia (0179051X), 01 September 2011, vol./is. 26/3(329-330), 0179051X

Author(s): Pitts, T, Troche, M, Mann, G, Rosenbek, J, Okun, MS, Sapienza, C

Title: Investigating interactional competencies in Parkinson's disease: the potential benefits of a conversation analytic approach.

Citation: International Journal of Language & Communication Disorders, 01 September 2011, vol./is. 46/5(497-509), 13682822

Author(s): Griffiths, Sarah, Barnes, Rebecca, Britten, Nicky, Wilkinson, Ray

Language: English

Abstract: Background: Around 70% of people who develop Parkinson's disease (PD) experience speech and voice changes. Clinicians often find that when asked about their primary communication concerns, PD clients will talk about the difficulties they have 'getting into' conversations. This is an important area for clients and it has implications for quality of life and clinical management. Aims: To review the extant literature on PD and communication impairments in order to reveal key topic areas, the range of methodologies applied, and any gaps in knowledge relating to PD and social interaction and how these might be usefully addressed. Methods & Procedures: A systematic search of a number of key databases and available grey literatures regarding PD and communication impairment was conducted (including motor speech changes, intelligibility, cognitive/language changes) to obtain a sense of key areas and methodologies applied. Research applying conversation analysis in the field of communication disability was also reviewed to illustrate the value of this methodology in uncovering common interactional difficulties, and in revealing the use of strategic collaborative competencies in naturally occurring conversation. In addition, available speech and language therapy assessment and intervention approaches to PD were examined with a view to their effectiveness in promoting individualized intervention planning and advice-giving for everyday interaction. Main Contribution: A great deal has been written about the deficits underpinning communication changes in PD and the impact of communication disability on the self and

others as measured in a clinical setting. Less is known about what happens for this client group in everyday conversations outside of the clinic. Current speech and language therapy assessments and interventions focus on the individual and are largely impairment based or focused on compensatory speaker-oriented techniques. A conversation analysis approach would complement basic research on what actually happens in everyday conversation for people with PD and their co-participants. Conclusions & Implications: The potential benefits of a conversation analysis approach to communication disability in PD include enabling a shift in clinical focus from individual impairment onto strategic collaborative competencies. This would have implications for client-centred intervention planning and the development of new and complementary clinical resources addressing participation. The impact would be new and improved support for those living with the condition as well as their families and carers.

Additional References

Title: Exercise and physical therapy in early management of Parkinson disease

Citation: Neurologist, November 2011, vol./is. 17/6 SUPPL.(S47-S53), 1074-7931 (November 2011)

Author(s): Alonso-Frech F., Sanahuja J.J., Rodriguez A.M.

Abstract: Experimental research has produced evidence in recent years underlying the beneficial effects that exercise can have in preventing and deceleration of the development of Parkinson disease. These beneficial effects are exerted through various mechanisms such as neuroprotection, neurotransmission, plasticity, neurogenesis, homeostasis, and neurotrophic factors. Studies on clinical application at an early stage are still scarce, although some results are encouraging. There are still many questions to determine the most suitable type of exercise (forced/voluntary), the time of its implementation, the duration, and the combination of strategies. Nonconventional therapies can play an important role in addition to exercise, and are so numerous that they could be adapted to the circumstances of patients, although there is no evidence to date that they could have a neuroprotective effect. 2011 by Lippincott Williams & Wilkins ISSN.

Title: The movement disorder society evidence-based medicine review update: Treatments for the motor symptoms of Parkinson's disease

Citation: Movement Disorders, October 2011, vol./is. 26/SUPPL. 3(S2-S41), 0885-3185;1531-8257 (October 2011)

Author(s): Fox S.H., Katzenschlager R., Lim S.-Y., Ravina B., Seppi K., Coelho M., Poewe W., Rascol O., Goetz C.G., Sampaio C.

Abstract: The objective was to update previous evidence-based medicine reviews of treatments for motor symptoms of Parkinson's disease published between 2002 and 2005. Level I (randomized, controlled trial) reports of pharmacological, surgical, and

nonpharmacological interventions for the motor symptoms of Parkinson's disease between January 2004 (2001 for nonpharmacological) and December 2010 were reviewed. Criteria for inclusion, clinical indications, ranking, efficacy conclusions, safety, and implications for clinical practice followed the original program outline and adhered to evidence-based medicine methodology. Sixty-eight new studies qualified for review. Piribedil, pramipexole, pramipexole extended release, ropinirole, rotigotine, cabergoline, and pergolide were all efficacious as symptomatic monotherapy; ropinirole prolonged release was likely efficacious. All were efficacious as a symptomatic adjunct except pramipexole extended release, for which there is insufficient evidence. For prevention/delay of motor fluctuations, pramipexole and cabergoline were efficacious, and for prevention/delay of dyskinesia, pramipexole, ropinirole, ropinirole prolonged release, and cabergoline were all efficacious, whereas pergolide was likely efficacious. Duodenal infusion of levodopa was likely efficacious in the treatment of motor complications, but the practice implication is investigational. Entacapone was nonefficacious as a symptomatic adjunct to levodopa in nonfluctuating patients and nonefficacious in the prevention/delay of motor complications. Rasagiline conclusions were revised to efficacious as a symptomatic adjunct, and as treatment for motor fluctuations. Clozapine was efficacious in dyskinesia, but because of safety issues, the practice implication is possibly useful. Bilateral subthalamic nucleus deep brain stimulation, bilateral globus pallidus stimulation, and unilateral pallidotomy were updated to efficacious for motor complications. Physical therapy was revised to likely efficacious as symptomatic adjunct therapy. This evidence-based medicine review updates the field and highlights gaps for research. 2011 Movement Disorder Society.

Sources Used
The following databases are searched on a regular basis in the development of this bulletin:

Amed
British Nursing Index
Cinahl
Medline

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