

tique générale du réseau ainsi que de garantir et d'appliquer ses orientations scientifiques. Le Conseil scientifique assure l'expertise scientifique des projets portés par le réseau. La coordination opérationnelle est assurée par le coordonnateur médical et scientifique et l'ARC coordonnateur. Son rôle est de centraliser et de diffuser l'information, d'accompagner/orienter les membres dans la réponse aux différents appels à projets, dans la mise en place, la conduite et la coordination des projets de recherche collaboratifs. **Résultats** Le réseau a atteint avec succès ses objectifs fixés pour la première année : structuration institutionnelle et opérationnelle avec la définition et l'officialisation de ces instances ; élaboration des protocoles de recherche impliquant plusieurs partenaires : plusieurs projets collaboratifs sont actuellement en cours de conception ; réponse aux appels à projets : 5 lettres d'intention ont été déposées aux différents appels à projets (PHRC-N, PHRC-I, PREPS, émergence) ; maillage territorial : initialement porté par 10 membres fondateurs, le réseau s'est élargi au cours de cette première année avec l'adhésion de 8 nouveaux membres. De nombreuses collaborations avec des structures académiques et privées ont été créées. Le réseau poursuit son développement et doit assurer son avenir par l'accomplissement de ses missions et la recherche de nouvelles sources de financement.

Conclusion Le réseau PREMOB facilite la mutualisation des compétences des acteurs de l'interrégion Nord-Ouest en apportant plus d'efficacité et de transversalité aux projets collaboratifs sur la prévention de la perte de mobilité et les chutes chez les personnes âgées.

Déclaration de liens d'intérêts Les auteurs n'ont pas précisé leurs éventuels liens d'intérêts.

<https://doi.org/10.1016/j.neucli.2019.10.110>

Vestibular evaluation in autosomal dominant cerebellar ataxia with prevalence in the south of Brazil

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Introduction Autosomal dominant cerebellar ataxias (ADCAs) represent a heterogeneous group of neurodegenerative disorders primarily affecting the cerebellum and its afferent and efferent connections, particularly brainstem, and spinal cord. Classical clinical findings of spinocerebellar ataxias (SCAs) are progressive gait and limb cerebellar ataxia, associated with nystagmus, dysarthria, and ophthalmoparesis. The fundamental element for vestibular analysis is nystagmus, which is a series of ocular movements with fast and slow components in opposite directions, and which occur alternately. The tests which comprise the vestibular exam allow an evaluation of the relationship between balance and posterior vestibular labyrinth function, the vestibular branches of the VIII cranial nerve, the vestibular nuclei in the floor of the IV ventricle, the vestibular pathways and especially, the vestibulo-oculomotor, vestibulocerebellar, vestibulospinal and vestibuloproprioceptive-cervical inter-connections. To describe the alterations observed in electronystagmography (ENG) of patients with spinocerebellar ataxia (SCA) types 2 and 3.

Material and method Twenty-two patients were studied and the following procedures were carried out: anamnesis, otorhinolaryngological and vestibular evaluations.

Results The clinical findings in the entire group of patients were: gait disturbances (93.7%), dysarthria (43.7%), headache (43.7%), dizziness (37.5%) and dysphagia (37.5%). In the vestibular exam, the rotatory (62.5%) and caloric (75%) tests were among those which presented the largest indexes of abnormalities; the presence of alterations in the exams was 87.5%, with a predominance of central vestibular disorders in 68.7% of the exams.

Conclusion Vestibular exams could be an auxiliary tool to investigate SCAs, besides a precise clinical approach and, particularly, molecular genetic tests.

Keywords Spinocerebellar ataxias; Vestibular dysfunction; Electronystagmography

Disclosure of interest The authors declare that they have no competing interest.

<https://doi.org/10.1016/j.neucli.2019.10.111>

The use of exergames in neurorehabilitation

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Introduction Parkinson's disease (PD) is a chronic disorder with progressive degeneration of the dopamine-producing cells in brain structures, including the substantia nigra.

Objective To evaluate the independence, confidence and balance in the development of daily activities in patients with Parkinson's disease before and after rehabilitation.

Material and methods A descriptive, retrospective cross-sectional study was carried out with 16 patients (mean 57.6 ± 18.7 years), submitted to anamnesis, otolaryngological, and vestibular assessment. The Vestibular Disorders Activities of Daily Living Scale (VADL) and the Activities-Specific Balance Confidence Scale (ABC) were applied before and after rehabilitation with virtual reality.

Results (a) The Instrumental sub-scale of the questionnaire showed significant difference ($P=0.022$, 95% CI: 1.21; 2.21) between the 1st and 2nd assessments; (b) The correlation between questionnaires showed significant result in the Ambulation sub-scale ($P=0.011$, 95% CI: -0.85; -0.17) 1st assessments and ($P=0.002$, 95% CI: -0.88; -0.31) 2nd assessments and the Functional sub-scale was only verified in the 2nd assessment ($P=0.011$, 95% CI: -0.85; -0.17); and (c) There was patients' clinical improvement in the final assessment after rehabilitation with significant result for the Tightrope Walk ($P=0.034$, 95% CI: -12.5; -0.3) and Ski Slalom games ($P=0.005$, 95% CI: -34.8; -6.6).

Conclusions Our results showed that VADL and ABC questionnaires, applied before and after rehabilitation, were important tools to measure the independence, confidence and balance while developing daily activities. VADL and ABC questionnaires may effectively contribute to quantify the effect of the applied therapeutics



and, consequently, its impact on the quality of life of patients with PD.

Keywords Parkinson's disease; Balance; Quality of life; Rehabilitation; Virtual reality

Disclosure of interest The authors declare that they have no competing interest.

<https://doi.org/10.1016/j.neucli.2019.10.112>

Alcoholic cerebellar degeneration: A case report



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Introduction Alcohol-induced cerebellar degeneration is the commonest type of acquired toxic ataxia. The onset of the cerebellar symptoms usually occurs at middle age, with a significant history of chronic alcohol abuse. Permanent cerebellar deficits are observed among alcoholics, and they persist even with alcoholic abstinence. The cerebellum is the structure that controls the stability of the gaze, chronic cerebellar diseases and acute alcohol intoxication affect cerebellar function. Ataxia and nystagmus are neurological manifestations present in this disease. To verify vestibulocochlear disorders observed in a case of alcohol-induced cerebellar ataxia.

Material and method It is a clinical case study of alcohol-induced cerebellar ataxia. The patient featured troubled walking (wide-based gait, preserved tactile sensitivity, hyperesthesia of the lower limbs, nystagmus, dysmetria, mild dysdiadochokinesia, numbness in the distal phalanges of the upper limbs, and uncoordinated movement).

Results The patient evidenced bilateral hearing loss from the frequency of 3 kHz and absence of ipsilateral reflexes; magnetic resonance imaging (MRI) showed atrophy of the Cerebellar Vermis; scale for the assessment and rating of ataxia (SARA) scored 15; brainstem auditory evoked potential test (BAEP) evidenced diffused dysfunction of the auditory pathways; balance testing showed labyrinthine hypofunction with presence of bidirectional nystagmus, featuring central vestibular disorder and the falls efficacy scale (FES-1-Brazil) evidenced abnormalities.

Conclusion The patient started treatment using B12 vitamin, thiamine, and physical therapy. Currently, despite reported balance improvement, he needs ambulation support. He features nystagmus, bilateral dysmetria, mild dysdiadochokinesia, continuous tinnitus in his left ear, blurred vision, and neck pain while moving it.

Keywords Alcohol; Imbalance; Ataxia; Brain; Neurodegeneration; auditory

Disclosure of interest The authors declare that they have no competing interest.

<https://doi.org/10.1016/j.neucli.2019.10.113>

Identification and new methods for quantifying new biomarkers of posturo-locomotor instability in a rodent model of acute peripheral vestibulopathy



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Introduction Unilateral vestibular lesion results in a typical syndrome characterized by postural imbalance, alteration of locomotion and gaze stabilization as well as cognitive and neurovegetative disorders. One of the main difficulties encountered in the development of new anti-vertigo drugs is the lack of sensitivity in the evaluation of this syndrome. The use of a dynamic weight-bearing device has revealed postural alterations in rats with unilateral vestibular neurectomy (UVN) on the left side (Tighilet et al., 2017). With a new version of this device, we can quantify additional parameters of postural and locomotor equilibrium. The objective of this study is to use this device to set new parameters on our rat model of vestibular pathology.

Material and methods We extracted different biomarkers from this device: the support surface, the weight distribution of rats when they are static or dynamic, and the successive positions of rat's barycenter.

Results Before UVN, rats show a symmetric distribution of their weight along the lateral axis. In the acute phase after UVN, rats distribute more weight on the right when they are static and then they put more weight on the left side. After UVN, the support surface of the rats increases, and the barycenter distribution show a higher dispersion.

Discussion/conclusion This study provides new information on the postural balance pattern observed after vestibular loss in rats. These data show a new way of quantifying the postural deficit associated with vestibular damage and the compensatory strategies adopted. These results could guide us on the validation of pharmacological compounds favoring the balance recovery.

Keywords Vestibular syndrome; Postural deficit; Balance pattern; Compensatory strategies

Disclosure of interest The authors declare that they have no competing interest.

<https://doi.org/10.1016/j.neucli.2019.10.114>

Altération des réponses posturales lors d'un déséquilibre suite à une lésion de la moelle épinière incomplète



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Introduction Les personnes ayant une lésion de la moelle épinière incomplète (LMÉi) présentent des réactions posturales altérées. Pour comprendre les mécanismes neuronaux sous-jacents, la modulation de l'excitabilité spinale lors de perturbations a été analysée.