

Physical and occupational therapy rehabilitation in the rare disease Marchiafava-Bignami**Reabilitação de fisioterapia e terapia ocupacional na doença rara Marchiafava-Bignami****Rehabilitación de fisioterapia y terapia ocupacional en la enfermedad rara Marchiafava-Bignami**

 Jonaina Fiorim Pereira de Oliveira¹,  Aline Caus Zuqui¹,  Kellen Valladão Schiavo¹
 Crystian Moraes Silva Gomes¹

Received: 10/03/2021 **Accepted:** 02/01/2022 **Published:** 29/06/2022

Objective: to report the effects of interdisciplinary rehabilitation of Physical Therapy and Occupational Therapy in a patient diagnosed with Marchiafava-Bignami Disease, in a Specialized Rehabilitation Center. **Methods:** case study carried out between 2018 and 2019, which used pre and post-intervention evaluations. **Results:** female patient, 60 years old, single, former alcoholic (excessive consumption until 2006), former smoker and with systemic arterial hypertension. There were 14 sessions, in which it was verified: Functional Independence Measure - Pre = 65 / Post = 89; Scale for the Assessment and Rating of Ataxia - Pre = 29.5/ Post = 22.5; Manual Ability Measure - Pre = - 0.119 logits / Post = 0.263 logits; Canadian Occupational Performance Measure - Performance Pre = 4.2 / Post = 5.5 and Satisfaction Pre = 3.5 / Post = 5.5. **Conclusion:** The interdisciplinary rehabilitation program favored the acquisition of manual function, balance, functional mobility and self-care.

Descriptors: Marchiafava-Bignami Disease; Rehabilitation; Physical Therapy; Occupational Therapy.

Objetivo: relatar os efeitos da reabilitação interdisciplinar de Fisioterapia e Terapia Ocupacional em uma paciente diagnosticada com Doença de Marchiafava-Bignami, em um Centro Especializado de Reabilitação. **Método:** estudo de caso realizado entre 2018 a 2019, que utilizou avaliações pré e pós intervenções. **Resultados:** paciente do sexo feminino de 60 anos, solteira, ex-etilista (consumo excessivo até 2006), ex-tabagista e com hipertensão arterial sistêmica. Realizou-se 14 sessões, nas quais verificou-se: Medida de Independência Funcional - Pré = 65 / Pós = 89; Escala para Avaliação e Graduação de Ataxia - Pré = 29.5/ Pós = 22.5; Medida de Habilidade Manual - Pré = - 0.119 logits / Pós = 0.263 logits; Medida Canadense de Desempenho Ocupacional - Desempenho Pré = 4.2 / Pós = 5.5 e Satisfação Pré = 3.5 / Pós = 5.5. **Conclusão:** O programa de reabilitação interdisciplinar favoreceu a aquisição da função manual, equilíbrio, da mobilidade funcional e do autocuidado.

Descritores: Doença de Marchiafava-Bignami; Reabilitação; Fisioterapia; Terapia Ocupacional.

Objetivo: reportar los efectos de la rehabilitación interdisciplinaria de Fisioterapia y Terapia Ocupacional en una paciente diagnosticada con la Enfermedad de Marchiafava-Bignami, en un Centro Especializado de Rehabilitación. **Método:** estudio de caso realizado entre 2018 y 2019, en el que se utilizaron evaluaciones previas y posteriores a la intervención. **Resultados:** Paciente de sexo femenino de 60 años, soltera, ex alcohólica (consumo excesivo hasta 2006), ex tabaquista y con hipertensión arterial sistémica. Se realizaron 14 sesiones, en las que se verificaron: Medida de Independencia Funcional - Pre = 65 / Post = 89; Escala de Evaluación y Graduación de Ataxia - Pre = 29,5 / Post = 22,5; Medida de Habilidad Manual - Pre = - 0,119 logits / Post = 0,263 logits; Medida Canadiense de Rendimiento Ocupacional- Desempeno Pre = 4,2 / Post = 5,5 y Satisfacción Pre = 3,5 / Post = 5,5. **Conclusión:** El programa de rehabilitación interdisciplinar favoreció la adquisición de la función manual, el equilibrio, la movilidad funcional y el autocuidado.

Descritores: Enfermedad de Marchiafava-Bignami; Rehabilitación; Fisioterapia; Terapia Ocupacional.

Contact: Jonaina Fiorim Pereira de Oliveira - nanafiorim@hotmail.com

INTRODUCTION

Marchiafava-Bignami disease (MBD) is considered rare and is characterized by demyelination of the corpus callosum associated with chronic alcohol consumption and vitamin B complex¹ deficiency. Historically, the first reports of the disease occurred in 1903, through the pathologists Marchiafava and Bignami, who identified and described the disease associating its symptoms of convulsion and coma with excessive alcohol use². The disease predominantly affects male patients between the ages of 40-50 years, and its etiology is not well defined¹.

The clinical presentation of MBD is not specific, however, studies indicate signs and symptoms such as dysarthria, behavioral changes, memory deficits, ataxia, hemiparesis, tetraparesis and gait alterations. These manifestations can occur acutely, subacutely and chronically. In the acute form, the individual has a more reserved prognosis, and may require hospitalization due to the presence of seizures, mental confusion and respiratory system involvement. The subacute form is characterized by varying degrees of confusion, dysarthria, behavioral changes, and memory deficits. In the chronic form, there is progressive dementia and gait disorders³⁻⁴.

The diagnosis of the disease is established by correlations between the clinical findings and complementary exams, and the magnetic resonance images of the skull are indicative of well-defined and symmetrical lesions of the corpus callosum. If diagnosis and treatment are not timely, MBD can progress to coma or death⁴⁻⁵. Factors related to the worse prognosis of the disease in the acute or subacute form involve: imaging exam with extracallosal lesions, severe alterations in the level of consciousness and excessive alcohol consumption⁶.

The clinical management of people with MBD is complex and requires a comprehensive, multidisciplinary approach. Care seeks to maximize functional performance and improve the individual's quality of life. The focus of care may change according to the clinical manifestations of the disease. For patients with MBD and their families, understanding the symptoms of the disease and how to manage them is essential to avoid early complications. Therefore, in rehabilitation, they should have access to a health education program, which is understood as a process of building knowledge for the appropriation of a theme, contributing to the autonomy of people in their care according to their needs⁷.

The impact of Marchiafava-Bignami Disease can be described from the International Classification of Functioning, Disability and Health, which describes functionality as the result of the dynamic interaction between body structures and functions, activities, participation and contextual factors⁸. This indicates that the impact of the disease will be different for each

individual, depending on all the elements mentioned. People with MBD have disabilities resulting from changes in body functions and structures, experiencing increasing problems in daily activities and participation.

There is a scarcity of specific articles related to the theme of rehabilitation in this population, with only two studies focused on care in the acute phase of the disease^{2,9}. Thus, this study aims to report the effects of interdisciplinary rehabilitation monitoring of Physical Therapy and Occupational Therapy in a patient with Marchiafava-Bignami Disease, in a Specialized Rehabilitation Center.

METHODS

This is a single case study, carried out between October 2018 and September 2019, using the A-B design, whereby A indicates the initial pre-intervention phase and B the post-intervention phase¹⁰. The following were used: occupational history and family participation, obtained from information documented in medical records. And the quantitative approach, collected through standardized assessments to measure changes in clinical status during the rehabilitation process.

Recruitment was made for convenience through the waiting list of the Occupational Therapy and Physical Therapy service of the Adult Neurological Treatment Unit (UTNA) of the Espírito Santo Physical Rehabilitation Center (CREFES). Eligibility criteria were: diagnosis of Marchiafava-Bignami disease according to the ICD-10, abstinence from alcohol consumption, agreement and availability to participate in the study.

UTNA develops an interdisciplinary rehabilitation model, which requires communication between the professionals involved and a certain degree of interpenetration between the areas so that the needs of the person with Marchiafava-Bignami disease are met. Thus, the therapeutic plan was built collaboratively between the professionals of each category and discussed with the other team members.

Sessions took place weekly, lasting approximately 40 minutes in each specialty. At specific times, meetings were held between professionals and patients and their families for guidance and education, with a view to finding resources to deal with the disease and functionality and its effects on life.

With regard to Physical Therapy interventions, it is pointed out:

(I) Physical exercises that covered: control of torso; strengthening and stabilization of the hip and lower limbs, important components for training in postural transfers; standing and walking with the aid of an auxiliary device;

(II) Postural transfers: pronation to supination; supination to pronation; supination for right and left sides; then evolving into sitting and trunk control training.

(III) Orthostasis and gait training with the aid of an auxiliary device: from the sitting position, the sitting and standing training began, followed by orthostasis with support; walking on a parallel bar and from the increase in dynamic balance, gait training with a walker was initiated;

(IV) Training of gross motor coordination, static and dynamic balance: Frenkel exercises; functional reach in sitting, followed by orthostasis; walking, trail of footprints and obstacle course in parallel bar, and walking with a walker;

(V) Family guidelines: management of postural transfers and maintenance of gait performance with the help of a walker; as well as clarifications regarding the maintenance of physical exercise at home and the prevention of falls.

As for Occupational Therapy, the following were carried out:

(I) Physical exercises: focus on neuromusculoskeletal functions and movement - joint mobility and stability, strength, muscle tone and endurance in upper limbs and torso, motor skills of alignment, stability, positioning and leaning.

(II) Training of manual function and functional writing: motor skills of reaching, dexterity, manipulation and coordination, evolving to graphomotor training and handwriting;

(III) Training and stimulation of independence in Activities of Daily Living (ADLs), in Instrumental Activities of Daily Living (IADLs) and in leisure: task-oriented functional training, using simulations of activities performed on a daily basis, mainly in relation to the upper limbs in the areas of self-care, including getting dressed, eating, care of personal equipment; communication management, and meal preparation and cleaning; crochet was identified as an activity of interest that had been abandoned and, according to the improvement of manual skills, progressive guidelines and strategies were carried out for the resumption;

(IV) Prescription and training of assistive technology resources and devices: chuck with elongated handle, thickeners, non-slip, grip replacements and weighted pencils;

(V) Family guidelines: home strategies to increase safety and independence in ADLs, IADLs and leisure, as well as the use of assistive technology devices and home exercises for task and functional writing.

Regarding the evaluation (before and after the interventions) the following were used:

(I) Functional Independence Measure (FIM)¹¹: analyzes the degree of independence in a set of 18 tasks, divided into two subscales: (1) Motor FIM, assesses activities related to self-care, which comprises the evaluation of performance in relation to hygiene, bathing, dressing the upper and lower parts, using the toilet; control of urine and feces; transfers from bed to

chair/wheelchair, to toilet, to shower or bath and locomotion, with assessment of gait and performance when going up and down stairs; (2) Cognitive/Social FIM, which measures comprehension, expression, social interaction, problem solving, and memory. Activities are rated on a 7-level dependency scale, where level 1 indicates complete dependence and level 7, complete independence. The interpretation of the final score considers: a) 18 points - complete dependence (total assistance); b) 19 to 60 points - modified dependency (up to 50% assistance in the task); c) 61 to 103 points - modified dependency (up to 25% assistance in the task); d) 104 to 126 points - modified to complete independence:

(II) Scale for the Assessment and Rating of Ataxia (SARA)¹²: has 8 subscales (1) Gait; (2) Stance; (3) Sitting; (4) Speech Disturbance; (5) Finger Chase Test; (6) Nose-Finger Test; (7) Fast Alternating Hand Movements; (8) Heel-Shin Slide. The assessment is performed by adding the scores obtained in the 8 items, with a possible range from 0 to 40. Higher scores indicate greater functional disability and, consequently, greater disease severity;

(III) Manual Ability Measure (ABILHAND)¹³: contains 23 items on bimanual activities on a three-level scoring scale: impossible, difficult or easy. ABILHAND is applied in the form of an interview, in which the individual is asked to assess the ease or difficulty of performing each activity when they are performed without help, regardless of the upper limb(s) and the strategies used. Responses must be submitted for an online review at <http://www.rehab-scales.org>. This analysis uses the Rasch model to convert the ordinal scores into a linear measure. In this model, an individual's manual skill is equivalent to his/her position along a continuous scale, in which skill levels are materialized by manual activities (items) of varying difficulties. The logit is a linear unit, which demonstrates the probability of success of the individual in a given item and divides the scale into equal intervals;

(IV) Canadian Occupational Performance Measure (COPM)¹⁴: semi-structured protocol that measures the individual's perception of the impact of a health condition, illness or trauma on the performance of functional tasks. The way the individual performs important daily tasks is evaluated under three aspects: performance, importance and satisfaction.

Quantitative data from the assessment instruments were analyzed through comparisons between pre and post-intervention scores, performed in Excel software. On the other hand, qualitative data were organized into patterns and presented discursively.

The study was approved by the Research Ethics Committee of the Health Sciences Center of the Universidade Federal do Espírito Santo, receiving Opinion No. 3,628,685 of 2019 and CAAE 21020919.0.0000.5060. All stages of the research were developed under the guidelines of Resolutions 466/2012 and 510/2016 of the National Health Council¹⁵⁻¹⁶.

RESULTS

The case described refers to a 60-year-old female patient, single, former alcoholic (excessive consumption until 2006), former smoker and with systemic arterial hypertension. In 2006, the patient began to experience instability and progressive imbalance in gait, with a high risk of falls and implications for instrumental activities of daily living (IADLs).

In the same year, an MRI of the skull showed: lesion in the splenium of the corpus callosum and periventricular white matter peritrigonally and adjacent to the occipital horns bilaterally, without compressive effect. Between 2007 and 2010, she underwent rehabilitation follow-up, with a diagnosis of polyneuropathy, showing discontinuity in treatment for demographic (change of domicile and health region) and socioeconomic reasons. In 2009, she was diagnosed with Marchiafava-Bignami disease. Since the onset of clinical symptoms, the patient has lived with her daughter, her main caregiver.

In the patient's occupational history, as a leisure activity, she performed crochet manual work and performed work activities as a housekeeper and cafeteria attendant, before the onset of symptoms.

In August 2018, she was referred to the rehabilitation service and, through screening with a physiatrist, eligibility criteria for a multiprofessional rehabilitation program with an interdisciplinary approach were found.

In October 2018, an evaluation was carried out with an Occupational Therapist and Physical Therapist, presenting ataxia, apraxia, changes in speed, amplitude and strength of movements, deficit in the execution of coordinated movements with progressive postural sway, dyssynergia, action tremor, difficulty in maintain balance in the sitting position and to make changes in decubitus and position, especially from supine to sitting. Dependent for wheelchair transfer and handling (functional mobility in a wheelchair). Orthostasis with maximum assistance and no gait.

There was also a decrease in coordination, dexterity and muscle strength in the upper limbs, a high level of dependence and a request for assistance in performing activities of daily living such as getting into bed, reaching for objects on the table, personal hygiene, dressing and undressing clothes and shoes, and in instrumental activities of daily living, meal preparation and cleaning, household management, and manual leisure activities. During the initial assessment, the patient showed a strong interest in improving mobility, functional writing and coordination, in addition to participating in household activities and returning to manual crochet activity. Being informed by the caregiver that during the period of discontinuation of treatment, there was a relapse in alcohol consumption.

There were 14 sessions, meetings considering both the patient and family members. Table 1 presents the activities developed by Physical Therapy and Occupational Therapy according to each session, or group thereof.

Table 1. Therapeutic procedures adopted per session. Vila Velha, 2019.

Session	Procedures
I	Anamnesis, interview about occupational history and profile, application of standardized assessments.
II, III, IV	Physical exercises of Physical and Occupational Therapy Gross motor skills and static balance training Postural transfer training Training of manual function and functional writing Prescribing and training assistive technology resources and devices Family Guidelines Physical and Occupational Therapy
V, VI, VII, VIII, IX	Physical and Occupational Therapy's Physical Exercise Program Training gross motor skills and dynamic balance Training of postural transfers, orthostasis and parallel bar gait Training of manual function and functional writing Prescribing and training assistive technology resources and devices Training and stimulation of independence in ADLs Family Guidelines Physical and Occupational Therapy
X, XI, XII, XIII	Physical and Occupational Therapy's Physical Exercise Program Training gross motor skills and dynamic balance Walking training with walker Training of manual function and functional writing Training and stimulation of independence in ADLs, IADLs and leisure Family Guidelines Physical and Occupational Therapy
XIV	Interview about changes in occupational and functional profile, reapplication of standardized assessments Family Guidelines Physical and Occupational Therapy

Tables 2 (MIF), 3 (SARA) and 4 (COPM) show the assessments carried out in Phase A or pre-intervention and in Phase B, after 14 weeks of intervention. The patient showed improvement in post-intervention functional performance with an increase in motor FIM from 28 to 54 points, which resulted in a post-intervention Total FIM of 89 points in contrast to the initial value of 63 points.

Table 2. Measure of Functional Independence (FIM) pre and post intervention. Vila Velha, 2019.

	Pre-Intervention	Post-Intervention
Self-Care		
Food	7	7
Personal hygiene: presentation and appearance	3	5
Bathing: washing body	2	4
Getting dressed: upper body	3	5
Getting dressed: lower body	3	4
Using the toilet	3	5
Sphincter control		
Urine control: Frequency of incontinence	1	4
Faeces control	1	4
Mobility		
Transference: bed, chair, wheelchair	1	4
Transference: toilet	1	4
Transference: bathtub or shower	1	4
Locomotion		
March/Wheelchair (W)	1	3
March/Wheelchair (CR)		
Stairs	1	1
Communication		
Comprehension (A)	7	7
Comprehension (V)		
Expression(V)	7	7
Expression(NV)		
Social Knowledge		
Social Interaction	7	7
Problem Solution	7	7
Memory	7	7
FIM Motor	28	54
FIM Cognitive	35	35
FIM Total	63	89

Regarding SARA, a reduction in the total score of the instrument was observed before (29.5) and after the intervention (22.5), suggesting a reduction in symptoms related to the graduation of Ataxia (Table 3).

Table 3. Assessment of Ataxia (SARA) pre and post intervention. Vila Velha, 2019.

	Pre-Intervention	Post-Intervention
March	8	8
Posture	6	5
Sitting up	4	2
Speech disorders	3	3
Finger chase test	1	1
Nose index test	1.5	0.5
Alternate and rapid hand movements	3	2
Heel-knee maneuver	3	1
Total score	29.5	22.5

Table 4 shows that there was an increase in performance from 4.2 to 5.5, and in satisfaction from 3.5 to 5.5.

Table 4. Canadian Occupational Performance Measure (COPM) pre and post intervention. Vila Velha, 2019.

Occupational Performance Areas	Occupational Performance Problem	Pre-Intervention Performance	Post-Intervention Performance	Pre-Intervention Satisfaction	Post-Intervention Satisfaction
	Getting dressed	8	8	9	9
Self-case	Functional mobility	5	8	5	8
Household chores	Meal prep	1	1	2	2
Leisures	Crocheting	3	6	1	3
Total		4,2	5,5	3,5	5,5

Data collected through ABILHAND indicated - 0.119 logits pre and 0.263 logits post intervention. And, the patient was discharged from the rehabilitation program in September 2019, being instructed to return to the service for reassessment in case of change in the functional framework.

DISCUSSION

Marchiafava-Bignami is a rare disease, and consequently, with a low index of clinical suspicion, without a standard clinical picture, which combined with the lack of knowledge, makes its diagnosis a challenge. The prognosis and rehabilitation of BMD are still uncertain, since there are few studies, and reports regarding rehabilitative efficacy are scarce, in addition to the natural decline associated with the disease, which can mask its interpretation^{1-2,6,9}.

Also, the few studies referring to the rehabilitation of patients with BMD^{2,9} do not express functional independence. Due to the problems arising from the symptoms of BMD, patients with this diagnosis present impairment in their functional independence, requiring assistance and

supervision to perform their daily tasks. The level of functional independence in neurological patients has been considered an indication of health-related quality of life, since performance in activities of daily living allows professionals in the field to have a broad view of health impairment and disease progression^{8,11}.

The Occupational Therapist and the Physical Therapist are professionals who are members of the multidisciplinary team, who work together to optimize the functional performance of the patient, with the purpose of helping them face their personal, social and work environment demands. A study⁹ pointed out that physical therapy rehabilitation as a care strategy in BMD: active-assisted or active kinesiotherapy; use of cognitive-motor execution; guidelines for patients and caregivers. In another study², the following were described: cognitive interventions (reading aloud, identification and naming of objects) and training of manual skills, such as writing, used in a female patient diagnosed with BMD.

In the case presented here, in the Physical Therapy and Occupational Therapy interventions, the same activities were followed, brought in these studies^{2,9} plus evaluation methods and interventions with scientific evidence in the rehabilitation of neurological patients, due to the scarcity of research on patients with BMD .

Physical Therapy and Occupational Therapy seek to improve functional capacity and independence. The main focus of Physical Therapy is on limitations related to mobility, including physical capacity, transfers, balance and gait, seeking to increase movement quality, functional independence and general fitness, avoiding or reducing secondary complications¹⁷.

Occupational Therapy focuses on enabling performance and involvement in meaningful activities and roles at home and in the community. These activities and roles can be classified into self-care, functional mobility, domestic activities, paid or unpaid work, leisure activities, among others. Its role is also to allow caregivers to support and supervise the patient in daily activities, considering their own well-being¹⁸.

In the case presented, the conducts were aligned with a view to maximizing the patient's functional performance. Initially, the physical exercise program of physical therapy focused on torso control, strengthening and stabilization of the hip and lower limbs, important components for training in postural transfers and orthostasis. Together, gross motor skills training, static and dynamic balance, parallel bar gait training and, later, a walker were performed. In relation to Occupational Therapy, exercises were performed to strengthen the upper limbs, training of motor skills to improve manual function, functional training directed to the task, using simulations of the activities carried out on a daily basis, mainly in relation to the upper limbs in the areas of self-care, housework, fine motor skills and writing.

Patient and family were instructed on assistive technology devices that could assist in performing ADLs, such as a chuck with an elongated handle, thickeners, grip replacements and weighted pencils. Concomitantly, ADL training was carried out, meeting the main demands and interests of the patient and caregiver. From the acquisition of manipulation, reach, coordination and dexterity skills, the patient was encouraged to return to the crochet activity, with time graduation and degree of difficulty in this task.

Rehabilitation of the neurological patient depends on an individual, thorough and effective assessment to identify deficits and thus provide appropriate treatment. Currently, functional assessment has been highlighted as an important concept for understanding the impact of the disease on the daily routine of patients. It includes a variety of factors, such as the perception of symptoms, environmental barriers, need for help and supervision, as well as emotional factors and the family context in which this individual is inserted^{8-9,17}.

In the present case study, the patient diagnosed with BMD presented a modified dependency pre-intervention score (63 points) in the dimensions of the proposed assessment, indicating moderate health-related impairment and the need for supervision in relation to their functional and occupational performance. After the Physical Therapy and Occupational Therapy interventions, the patient also presented a post-intervention score of modified dependence (89 points), but with significant gains in self-care activities (personal hygiene, clothing and use of the toilet), sphincter control and mobility requiring less assistance for performance.

The SARA scale is a method used to assess the severity of ataxia¹². The pre-intervention score of the SARA scale indicated moderate/severe functional impairment (29.5 points). The post-intervention score of the SARA scale showed improvement in functional capacity (22.5 points) mainly in the activities of sitting, nose-finger test and heel-shin slide. Such findings indicate that the evaluation and intervention methods used by the Physical Therapist and Occupational Therapist professionals were relevant to the case, optimizing the patient's functional performance.

Changes in manual function were observed through the ABILHAND results, pre-measured 0.119 logits and post-intervention 0.263 logits. The logit is a linear unit, which demonstrates the probability of success of the individual in a certain item of the instrument. Positive measures imply greater ability to perform the items evaluated when compared to negative measures¹³. The patient presented positive perceptions regarding performance and satisfaction after the interventions, evaluated through the COPM in the area of functional mobility and in the performance of crochet activities, both in terms of performance and

satisfaction. Two-point changes in assessment scores are considered clinically relevant, according to information in the protocol manual¹⁴.

The significant impairment presented by the pre-intervention patient is a result of the course of the disease, environmental, socioeconomic, and personal factors, such as the previous discontinuation of treatment for demographic reasons, contributing to a low functional performance, which leads to high expectations in the levels of limitations. functional, which should be considered in multidisciplinary rehabilitation programs.

This stimulates the creation of new methods and concepts of reassessment of the individual, discovering means of investigation in a conception focused on the demand of the disease. It is also believed that the importance of identifying the functional capacity of the person with BMD and their competence to perform their functional, work and leisure activities brings health professionals closer to the reality they experience. This also enables better planning of the assistance to be provided, especially when there is a reflection on disabilities, as these will directly interfere with the patient's quality of life, their daily demands, their caregivers and, consequently, the environment in which they live.

Interprofessional health practices refer to ways of working as a team, based on collaboration and effective communication between professionals and occur when the actors involved learn from each other and from each other, generating collaboration and, consequently, better results in the provision of care in health services. This sharing favors collaborative practice that is based on healthy and constructive interaction, enabling the exchange of knowledge from the individual perspective and experience, strengthening health care systems and promoting comprehensive care¹⁹.

The adoption of interprofessional practice increases the safety of care, as it reduces risks, errors and damage, in addition to contributing to the satisfaction of health needs, precisely introducing actions to prevent diseases and promote health and improve satisfaction and comfort of users, which has repercussions in terms of the reception provided, comprehensive care and adherence to the prescribed/guided treatment or care plan²⁰. In this way, the team sought to recover function and compensate or adapt to the functional loss, in addition to preventing or delaying the course of deterioration of functionality in all areas of life.

CONCLUSION

The present case study highlighted the importance of interdisciplinary rehabilitation of Physical Therapy and Occupational Therapy in the reduction of functional disabilities in BMD, which favored the acquisition of manual function, balance, functional mobility and self-care.

Despite the importance of the case study in making it possible to carefully examine the effects of the intervention, its design limits the generalizability of the results to a wider population. In turn, it is hoped that the interdisciplinary experience described will stimulate further research on the rehabilitation follow-up of people with Marchiafava-Bignami disease.

REFERENCES

1. Carrilho PEM, Santos MBM, Piasecki L, Jorge AC. Marchiafava-Bignami disease: a rare entity with a poor outcome. *Rev Bras Ter Intensiva* [Internet]. 2013 [cited in 13 Dec 2019]; 25(1): 68-72. DOI: <http://dx.doi.org/10.1590/S0103-507X2013000100013>
2. Takahashi N, Kawamura M, Kobayashi Y. A case of nonalcoholic marchiafava-bignami disease with left-right differential agraphia of chinese characters. *Case Rep Neurol*. [Internet]. 2018 [cited in 13 Dec 2019]; 10(2):232-41. DOI: <https://doi.org/10.1159/000492528>
3. Marchi F, Tondo G, Verrasi C, Cantello R. Marchiafava-Bignami disease: uncertain MRI predictors of outcome. *J Neurol Neurosci*. [Internet]. 2017 [cited in: 18 Aug 2021]; 8(1):1-3. Available from: <https://www.jneuro.com/neurology-neuroscience/marchiafavabignami-disease-uncertain-mri-predictors-of-outcome.php?aid=18442>
4. Melo AL, Barata SP, Rodrigues D, Serra M. Marchiafava Bignami disease: the importance of early diagnosis and treatment by a multidisciplinary team. *Revista Portuguesa de Psiquiatria e Saúde Mental* [Internet]. 2020 [cited in 18 Aug 2021]; 6(1):31-5. Available from: <https://www.revistapsiquiatria.pt/index.php/sppsm/article/view/120>
5. Soto GR, Rangel CC, Rayo AC. Enfermedad de Marchiafava-Bignami en dos pacientes mexicanos: hallazgos histopatológicos y correlación clínico-radiológica. *Med Interna Méx*. [Internet]. 2010 [cited in 13 Dec 2019]; 26(6): 619-24. Available from: <https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=28444>
6. Dong X, Bai C, Nao J. Clinical and radiological features of Marchiafava-Bignami disease. *Medicine* [Internet]. 2018 [cited in 13 Dec 2019]; 97 (5). DOI: <https://doi.org/10.1097/MD.00000000000009626>
7. Ministério da Saúde (Brasil). Glossário temático: gestão do trabalho e da educação na saúde [Internet]. 2ed. Brasília: Ministério da Saúde; 2012 [cited in 13 Dec 2019]. 44 p. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/glossario_tematico_gestao_trabalho_educacao_saude_2ed.pdf
8. World Health Organization. International classification of functioning, disability and health (ICF) [Internet]. Geneva: World Health Organization; 2001 [cited in 13 Dec 2019]. Available from: <https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health>
9. Moreira ML, Fontes SV, Almeida TF, Fukujima MM. Abordagem fisioterapêutica nas manifestações neurológicas decorrentes do alcoolismo. *Rev Neurociênc*. [Internet]. 1999 [cited in 13 Dec 2019]; 7 (3):104-7. DOI: <https://doi.org/10.34024/rnc.1999.v7.10311>
10. Deitz JC. Single-Subject Research. In: Kielhofner, G, organizador. *Research in occupational therapy: Methods of inquiry for enhancing practice*. Philadelphia: FA Davis Company; 2006, p.141-154

11. Riberto M, Miyazaki MH, Jucá SSH, Sakamoto H, Pinto PPN, Battistella LR. Validação da versão brasileira da Medida de Independência Funcional. *Acta Fisiátrica* [Internet]. 2004 [cited in 13 Dec 2019]; 11(2):72-6. DOI: <https://doi.org/10.5935/0104-7795.20040003>
12. Braga-Neto P, Godeiro-Junior C, Dutra LA, Pedroso JL, Barsottini OGP. Translation and validation in to brazilian version of the scale of the assessment and rating of ataxia (SARA). *Arq Neuropsiquiatr*. [Internet]. 2010 [cited in 13 Dec 2019]; 68(2):228-30. DOI: <http://dx.doi.org/10.1590/S0004-282X2010000200014>
13. Basilio ML, Faria-Fortini I, Magalhães LC, Assumpção FSN, Carvalho AC, Teixeira-Salmela LF. Cross-cultural validity of the brazilian version of the ABILHAND questionnaire for chronic stroke individuals, based on Rasch analysis. *J Rehabil Med*. [Internet]. 2016 [cited in 13 Dec 2019]; 48(1):6-13. DOI: <https://doi.org/10.2340/16501977-2044>
14. Law M, Baptiste S, Carswell A, Mccoll MA, Polatajko H, Pollock N. Aplicação do teste e procedimentos de pontuação. Belo Horizonte: Editora UFMG; 2009. Medida canadense de desempenho ocupacional (COPM). p.22-23.
15. Conselho Nacional de Saúde (Brasil). Resolução Nº 466, de 12 de dezembro de 2012 [Internet]. D.O.U Brasília, 13 jun 2013 [cited in 13 Dec 2019]; Seção 1. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html
16. Conselho Nacional de Saúde (Brasil). Resolução Nº 510, de 7 de abril de 2016 [Internet]. D.O.U Brasília, 24 maio 2016 [cited in 13 Dec 2019]; Seção 1. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/cns/2016/res0510_07_04_2016.html
17. Bertoldi ALS, Israel VL, Ladewig I. O papel da atenção na fisioterapia neurofuncional. *Fisioter Pesqui*. [Internet]. 2011 [cited in 13 Dec 2019]; 18:195-200. Available from: <https://www.scielo.br/j/fp/a/Q335FmbqQZTnmqXhfnyfPsP/?lang=pt>
18. American Occupational Therapy Association. Estrutura da prática da Terapia Ocupacional: domínio & processo. *Rev Ter Ocup*. [Internet]. 2015 [cited in 13 Dec 2019]; 26(Esp):1-49 . Available from: <https://www.revistas.usp.br/rto/article/view/97496>
19. World Health Organization. Marco para ação em educação interprofissional e prática colaborativa. Genebra: WHO; 2010 [cited in 03 Feb 2021]. Available from: <http://untref.edu.ar/uploads/Marco%20formacion%20interprofesional%20OMS-portugues.pdf>
20. Ceccim, RB. Conexões e fronteiras da interprofissionalidade: forma e formação. *Interface (Botucatu, Online)* [Internet]. 2018 [cited in 03 Feb 2021]; 22(Supl 2):1739-49. Available from: https://www.scielo.br/scielo.php?pid=S1414-32832018000601739&script=sci_abstract

Associated Publisher: Víctor Augusto Cavaleiro Corrêa

Conflict of Interest: the authors declare that there is no conflict of interest

CONTRIBUTION

Jonaina Fiorim Pereira de Oliveira and **Crystian Moraes Silva Gomes** contributed to the design, collection and analysis of data, writing and revision. **Aline Caus Zuqui** participated in the design, collection and analysis of data and writing. **Kellen Valladão Schiavo** was responsible for the design and revision.

How to cite this article (Vancouver)

Oliveira JFP, Zuqui AC, Schiavo KV, Gomes CMS. Physical and occupational therapy rehabilitation in the rare disease Marchiafava-Bignami. *Rev. Fam., Ciclos Vida Saúde Contexto Soc.* [Internet]. 2022 [cited in *insert day, month and year of access*]; 10(2):215-29. Available from: *insert access link*. DOI: *insert DOI link*.

How to cite this article (ABNT)

OLIVEIRA, J. F. P.; ZUQUI, A. C.; SCHIAVO, K. V.; GOMES, C. M. S. Physical and occupational therapy rehabilitation in the rare disease Marchiafava-Bignami. **Rev. Fam., Ciclos Vida Saúde Contexto Soc.**, Uberaba, MG, v. 10, n. 2, p. 215-229, 2022. DOI: *insert DOI link*. Available from: *insert access link*. Access in: *insert day, month and year of access*.

How to cite this article (APA)

OLIVEIRA, J.F.P., ZUQUI, A.C., SCHIAVO, K.V., & GOMES, C.M.S (2022). Physical and occupational therapy rehabilitation in the rare disease Marchiafava-Bignami. *Rev. Fam., Ciclos Vida Saúde Contexto Soc.*, 10(2), 215-229. Retrieved in *insert day, month and year of access* from *insert access link*. DOI: *insert DOI link*.



This is an open access article distributed under the terms of the Creative Commons License