78 - PHYSICAL ACTIVITY IN REHABILITATION AFTER CEREBROVASCULAR ACCIDENT (CVA) - AN EXPERIENCE IN JOINVILLE / SC

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INTRODUCTION

Stroke (acronym: stroke) accident, or cerebrovascular (acronym: AVE) accident, commonly called stroke is characterized by rapid loss of neurological function due to blockage (ischemia) to interrupt the blood supply of the brain structures or penetrations (bleeding) causing the blood maintains the oxygen and glucose to the brain, carried by the cerebral blood vessels, no longer reach the region, causing the loss of functionality of neurons. According to Tortora (2012), is a disease of sudden onset in which the patient may have difficulty moving or paralysis of the limbs on the same side of the body, difficulty in speaking and / or articulation of words and sudden visual loss of a part of the field visual. You can still evolve coma and other signs and, in certain cases, can lead to death. The type of ischemic stroke is the most common in humans.

To be idle most of the time, patients with stroke loses much of its capacity and aerobic exercise done correctly is essential in the rehabilitation of patients who suffered a stroke.

Individuals with sequelae of stroke typically follows a routine intervention and treatment in accordance with the type and cause of stroke.

This routine varies from surgery to medical treatment, which was subsequently changed to physical therapy. This is as far as possible, to restore function and / or minimize the sequels. However, the frame tends, over time, to stabilize the patient and has, in most cases, hemiparesis or hemiplegia, depending not only on the brain region affected, but also the extent of that involvement. This causes the person to become a patient eternal physiotherapy, developing, in most cases, an activity relative. Another situation that commonly occurs, making it an aggravating factor, is when the patient returns home and stays in inactivity. This inactivity may be one of the raunchier causes of your stroke, and may also be the cause of another accident.

People with sequelae of stroke are, mostly remote from the regular physical activity to maintain their health condition or their organic, which provides a poor quality of life. What is being offered as option activity are as physiotherapy sessions, which often becomes monotonous and boring, since the deficiency is already established and there is very little to be done, but to prevent further or the appearance of secondary deficiencies.

Programs of regular physical activity developed in Brazil, but also in much of the world, have as main goal, almost always, the preventive nature, ie, activities that avoid the occurrence of a stroke. Given this, the questions arise of which engage in rehabilitation activities with individuals and / or pacientes.que already developed a stroke. Researchers like Paffenbarger& Olsen (1996) argue that very few studies have been developed in relation to stroke and vascular physical activity. In Brazil, there is no known program of physical and / or sporting activity for people with symptomatic stroke, discharged from rehabilitation programs. Also, are not known studies that have been developed with the aim of verifying the changes of emotional behavior of these individuals, after conducting a program of regular physical activity, with emphasis on improving their quality of life. Thus, the work presented here is intended to demonstrate a methodology to monitor the work of recovery after stroke and determine possible changes in the parameters of overall quality of life, through the vitals of these individuals, after conducting a regular program of physical activity and recreation.

Prescribed and demonstrated in this report, activities aimed at improving stroke recovery, the focus being the improvement of motor coordination and cardiovascular fitness. The activities began in 2008, comprising various forms.

The intervention of physical exercise can be performed in the acute, subacute and chronic phase of stroke and includes aerobic activity, strength exercises, changes in lifestyle or other strategies.

Encouraging regular physical activity and good eating habits rescue, aimed at maintaining physical and mental health, which should be a priority in the current, otherwise society, the stroke will increasingly have space in reality the population. Lopes and Lobo (2001) comment that gradually the importance of physical activity, aiming at quality of life, has been established to be a basic requirement for healthy growth and development, besides being a regulator of body fat. The authors also comment that gradually the importance of physical activity, aiming at quality of life has been recognized.

The quality of life in addition to the aspect of food and physical activity encompasses, according Felce (1997), the areas of life in six different areas: physical, mental, social, productive, emotional and civic. To cultivate a good quality of life is paramount to give attention to the habits adopted in everyday life.

The protective effect of physical activity may partially mediate these effects by other risk factors of stroke. Physical activity has a positive effect in lowering blood pressure, lipid profile, insulin sensitivity, body weight, blood coagulation and fibrinolysis (Hu et al., 2002). The intervention of physical exercise can be performed in the acute, subacute and chronic phase of stroke and includes aerobic activity, strength exercises, changes in lifestyle or other strategies.

The effect of exercise on quality of life is much less clear that its effect on physical training. The evaluation of the benefits of an exercise program for people who have had strokes with more than six months time showed that, in addition to significant benefits on functional limitations as strength, balance and mobility, was also observed an improvement in the quality of life in the early months rehabilitation (Duncan et al., 2003).

Thus, the results of different studies show that physical activity is an important factor to decrease the risk of stroke. The protective effect of physical activity on the incidence of stroke and also in post-stroke phase needs greater emphasis in monitoring this important public health problem.

METHODOLOGY

Initially, he was made an explanation about the project work and awareness of patient recovery after ischemic stroke, so that it was aware of the methodology applied. The same is received, including information about the recommended food habits.

The project also involved research and preparation of material for exhibition. The patient's recovery was assessed during the year 2013, through the month of October 2014, involving such things as age, weight and height to establish the anthropometric profile.

Table 1.Age, body mass and height of the anthropometric profile.

specimen	Age (years)	Bodyweight (kg)	Height (m)
Man(2013)	*55,5±0,02*	*93,4±0,86*	*1,90±0,0*
Man(2014)	*56,3±0,02*	*94,7±0,80*	*1,90±0,0*

Then the collection of waist measurement, hip, height and body mass was performed. The collected data were

tabulated in a spreadsheet prepared for the event. The results for the profile and the risk for cardiovascular disease and overall it was printed, and delivered to the explained evaluated by guardians.

The developed physical activities were the following:

a) Stretches upper and lower limbs;
b) Balance exercises;
c) any walk;
d) 5km Race at the racetrack "LauroHolzhapfel" in Univille, twice a week;
e) Exercise on the Physical Activity Univille Center (FC) for one hour, once a week;
f) Exercise bike for 30 minutes, twice a week;
g) Belt Academy (CAF) of Univille for 40 minutes;
h) Race Street (5 Km) once a week.

There was the daily monitoring of parameters such as weight (kg), height (cm), body mass index (BMI), resting heart rate (HRrest), Maximum Heart Rate (MHR), we used a (Polar) and time (in minutes) used for physical activities.

RESULTS AND DISCUSSION

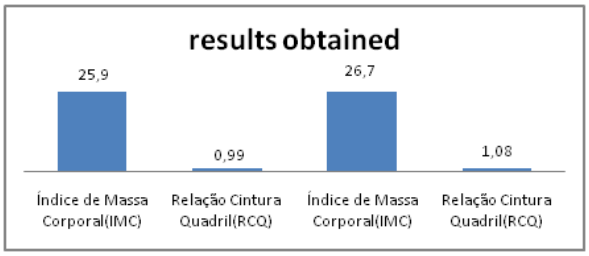
The results obtained by calculating the Body Mass Index (BMI) and Waist Hip Ratio (WHR) are presented in Table 2, including data for the months of activity.

Table 2. Results of BMI and WHR sample evaluated from January to December 2013, January to October 2014 in Lab. ExercisePhysiologyfrom Univille, Joinville/SC.

specimen	Body Mass Index (BMI)	Waist Hip Ratio (WHR)
Man(2013)	*25,9±0,21*	*0,99±0,11*
Man(2014)	*26,7±0,27*	*1,08±0,18*

In Figure 1 you can see the results in the assessments and indicate a moderate risk for cardiovascular disease.

Figure 1. Results of Body Mass Index and Waist Hip Ratio of the recovering patient evaluated in the years 2013 and 2014.

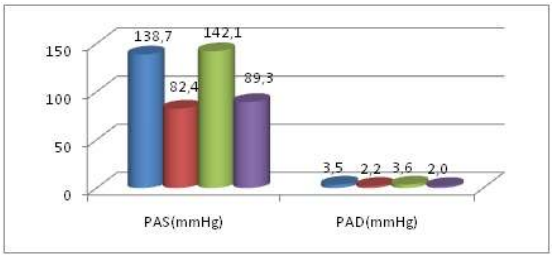


Source: Primary (2013 and 2014)

According to the reference table of the World Health Organization (WHO) BMI is within the range of ideal or acceptable for general health maintenance weight, but the result of WHR as the reference table Applied Body Composition Assessment, (1996), indicates moderate risk for cardiovascular disease for both women and for men.

The mean systolic blood pressure and diastolic blood pressure (mmHg) from 2013 to 2014 evaluated referring to ten (10) months of the study is presented in Figure 2 below.

Figure 2. Mean systolic blood pressure and diastolic blood pressure (mmHg) in the years 2013 and 2014.



Source: Own (2013 and 2014)

After ischemic cerebrovascular accident was performed physical exercises to rehabilitate the individual in recovery, with stretching of arms and legs, balance exercises, where coordination was last worked and began the practice of walking. Then the year was the bicycle. Immediately after swimming, treadmill and weight training later, and runs on an athletics track, the time of the exercise was carried out in a gradual way, so that the recovering patient was evolved and adapted to the environment of the Academy of Univille, following all day the body mass and cardiovascular beats.

The resting heart rate, maximum and standard deviation. The data collected show satisfactory values as the implementation of common activities performed by the patient in recovery responses.

Table 3. Heart Rate Report for Minutes to Sleep (2013)

Report of heartbeat per Minute (bpm) MINIMUM												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
average	46,3	46	49	48	48	46	49	49	43	47	47	45
StdDev	1,0	3,5	5,0	2,5	4,9	0,7	3,6	3,8	2,2	4,3	2,8	1,4

Source: Own; Mean and standard deviation: 46.9 ± 1.5.

Table 4. Heart Rate Report for Minutes Maximum (2013)

Report of heartbeat per Minute (bpm) MAXIMUM												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
average	138,4	129,8	140,8	141,6	144,8	142,7	141,5	138,1	140,1	139,8	138,0	144,9
StdDev	18,8	15,9	8,6	7,4	13,5	6,1	9,5	10,6	10,2	8,3	12,4	14,8

Source: Own; Mean and Standard Deviation: 140.2 ± 3.8

Table 5. Report by Minute Heart Rate at Rest (2014)

Report of heartbeat per Minute (bpm) MINIMUM									
	Feb	Mar	Abr	Mai	Jun	Jul	Ago	Set	Out
average	44	47	45	82	93	92	91	60	68
StdDev	3,1	3,4	2,5	19,0	1,0	1,2	0,9	17,6	23,1

Source: Own; Mean and standard deviation: 68.9 ± 9.1

Table 6. Report by Heart Rate Minutes Maximum (2014)

Report of heartbeat per Minute (bpm) MAXIMUM									
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
average	144	146	141	159	153	147	152	153	142
StdDev	12,3	11,1	7,7	39,8	31,1	5,0	28,6	33,2	43,0

Source: Own; Mean and Standard Deviation: 148.6 ± 14.5

For the patient who has suffered a stroke better recovery and quality of life, it is essential that he be examined and treated by a multidisciplinary team of health professionals.

We observed an increase in the maximum heart rate for the year 2013 to 2014 average, probably because the patient's recovery has increased the pace of the physical activities.

The recovering patient reports to improve physical, mental, psychological and social status.

These findings support the existence of such indices and drive to take previous initiatives related to health care through healthy eating and physical activity.

CONCLUSION

The completion of the work presented here indicates important factors in data interpretation.

According to Table 2 and Figure 1. It can be seen that the physical activities were essential for maintaining a BMI and WHR at appropriate levels.

Can conclude that, given the propensity for hereditary and / or genetic diseases such as changes in cardiac fibers is necessary to develop a program of physical activities in order to strengthen these fibers and whole system (cardiovascular) Circulatory involved.

When there is the propensity for cardiovascular disease, according to Tortora (2012) and Guedes (2006), it is necessary to develop actions in order to preserve the health of the patient, with previous initiatives related to health care, lifestyle, by adopting of healthy eating and regular physical activity.

The encouragement and guidance for rehabilitation in eating habits and physical activities in time to adopt changes, aiming at preventing further changes. Gains on the realization of this project become important because they demonstrate that adaptation to exercise provides improvement in the general conditions, anatomical and physiological as well as social benefits and self-esteem. The successful accomplishment of this work is an incentive for program expansion and development of new projects.

REFERENCES

ABESO. Órgão Informativo da Associação Brasileira para o Estudo da Obesidade. 2001.

Heyward, V, H. Avaliação da Composição Corporal. Medicina Esportiva, 1996.

Duncan P, Studenski S, Richards L Gollub S, Lai SM, Reker D, Perera S, Yates J, Koch V, Rigler S, Johnson D. Randomizedclinicaltrialoftherapeuticexercise in subacutestroke. Stroke 2003; 34: 2173–2180.

FELCE, D. Defining and applying the concept of quality of life.Journal of Intelectual Disability Research.1997.

GUEDES, Dartagnan P.; GUEDES, Joana E. R. P. Manual prático para a avaliação em educação em educação física. Barueri, São Paulo: Manole, 2006.

GHORAYEB, N.; BARROS NETO, T. L. O exercício: preparação fisiológica, avaliação médica, aspectos especiais e preventivos. São Paulo: Atheneu, 1999.

HEYWARD, V.H., & STOLARCZK, L.M..Applied Body Composition Assessment.Champaign: HumanKinetics. 1996.

HOWLEY, Edward T.; FRANKS, B. Don. Manual do instrutor de condicionamento físico para a saúde. 3.ed. Porto Alegre: Artes médicas Sul, 2000.

Hu G, Pekkarinen H, Hanninen O, Yu Z, Guo Z, Tian H. Commuting, leisure-time physical activity, and cardiovascular risk factors in China. Med Sci Sports Exercise.2002; 34: 234–238.

Lee CD, Folsom AR, Blair SN. Physical activity and stroke risk: a meta-analysis. Stroke. 2003; 34: 2475–2481.

LOBO, A.S.; LOPES, A.S. Adiposidade corpórea e sua relação com o gasto energético e a composição da dieta de escolares do sexo feminino. Rev. Bras .Ativ. Saúde. V.6, n.2, p.69-78, 2001.

NIEMAN, David C. Exercício e saúde. São Paulo: Manole, 1999.

POLLOCK, Michael L.; WILMORE, Jack H. Exercícios na saúde e na doença. 2.ed. Medsi: Rio de Janeiro, 1993.

PAFFENBARGER, R. S. Jr& Olsen, E. LifeFit: An Effective Exercise Program for Optimal Health and a Longer Life, Champaign, IL: Human Kinetics, 1996.

TORTORA, J. G. Corpo humano: fundamentos de anatomia e fisiologia humana. 8ª ed. Porto Alegre: Artmed, 2012.

WHITE, Ellen G. Conselhos sobre o regime alimentar. São Paulo: Casa,1993.

WANNAMETHEE G, Shaper AG. Physical activity and stroke in British middle aged men. BMJ 1992; 304: 597–601.

PHYSICAL ACTIVITY IN REHABILITATION AFTER CEREBROVASCULAR ACCIDENT (CVA) - AN EXPERIENCE IN JOINVILLE / SC

ABSTRACT

INTRODUCTION: brain (stroke) accident, or cerebrovascular (stroke) accident is characterized by rapid loss of neurological function due to blockage (ischemia) the interruption of blood supply of the brain structures or rupture (hemorrhage). The stroke patient loses much of its capacity and aerobic exercise done correctly is essential in the rehabilitation of patients who suffered a stroke. The work presented here aims to demonstrate a methodology to monitor the work of recovery after stroke and determine possible changes in the parameters of overall quality of life, through the vitals of these individuals, after conducting a regular program of physical and recreational activity. Encouraging regular physical activity and good eating habits rescue, aimed at maintaining physical and mental health, which should be a priority in the current, otherwise society, the stroke will increasingly have space in reality the population. OBJECTIVE: This project aimed to clarify the importance of practice and physical activities such as walking, cycling, treadmill running in the street rehabilitation. METHODS: Initially, it was made an explanation about the

project work and the awareness of the patient in recovery. The project also involved research and preparation of material for exhibition. The patient's recovery was assessed during the year 2013, through the month of October 2014, involving such things as age, weight and height to establish the anthropometric profile. Finally prescribed physical activities. CONCLUSION: These results show that physical activity provides improvement in the general conditions, anatomical, physiological and also self-esteem and social benefits. The successful accomplishment of this work is an incentive for program expansion and development of new projects.

KEYWORDS: Stroke, Aerobic and quality of life.

L'ACTIVITÉ PHYSIQUE EN RÉADAPTATION APRÈS ACCIDENT VASCULAIRECÉRÉBRAL (AVC) - UNEEXPÉRIENCE À JOINVILLE / SC

RÉSUMÉ

INTRODUCTION: cerveau (AVC) accident, ouvasculairecérébral (AVC) accident estcaractériséepar la perterapide de la fonctionneurologique due à l'obstruction (ischémie) l'interruption de l'approvisionnement en sang des structures ou rupture (hémorragie) cerveau. Le patient de course perd beaucoup de sacapacité et l'exerciceaérobique fait correctementestessentieldans la réhabilitation des patients qui ontsubi un accident vasculairecérébral. Le travailprésentéici vise à démontrer une méthodologie à suivrelestravaux de récupérationaprèsun AVC etdéterminerleschange mentspossiblesdanslesparamètres de laqualité de vieengénéral, à traverslesentrailles de cespersonnes, aprèsavoirprocédé à unprogrammerégulier d'activitéphysique et de loisirs. Encouragerl'activitéphysiquerégulièreet de bonneshabitudes alimentairessauvetage, visant à maintenirlasantéphysique et mentale, quidevraitêtre une prioritédanslecourant, lasociétéautrement, lacoursesera de plusenplusdisposer d'un espace danslaréalité de lapopulation. OBJECTIF: Ceprojetvisait à clarifierl'importance de la pratique et desactivitésphysiquestelles que la marche, levélo, tapisroulantdanslaréhabilitation de larue. MÉTHODES: Audépart, il a été fait une explicationsurletravail de projet et laprise de consciencedu patientdanslarécupération. Le projetcomprenaitégalementlarecherche et lapréparation dumatérielpourl'exposition. Le rétablissementdupatient a étéévaluéeaucours de l'année 2013, aucoursdu mois d'Octobre 2014, impliquantdeschosestelles que l'âge, lepoids et lataille à établirleprofilanthropométrique. Enfinprescritactivités physiques. CONCLUSION: Cesrésultats montrentquel'activité physique apporteuneaméliorationdans les conditions générales, anatomique, physiologique etaussil'estime de soi et les prestationssociales. L'accomplissement de ce travail estune incitation pour l'expansion et le développement de nouveaux projetsprogramme.

MOTS-CLÉS: AVC, d'aérobicet de laqualité de vie.

ACTIVIDAD FÍSICA ENLAREHABILITACIÓNDESPUÉS DE ACCIDENTES CEREBROVASCULARES (ACV) - UNA EXPERIENCIAEN JOINVILLE / SC

RESUMEN

INTRODUCCIÓN: cerebro (accidente cerebrovascular) accidente, o cerebrovascular (ictus) accidente se caracteriza por una rápida pérdida de lafunción neurológica debido a laobstrucción (isquemia) lainterrupciónde lsuministro de sangre de lasestructurascerebrales o ruptura (hemorragia). El paciente con ictus pierdegran parte de sucapacidad y elejercicio aeróbico se hacecorrectamente es esencialenlarehabilitación de pacientes que hansufridoun derrame cerebral. El trabajo que aquí se presenta pretende mostrar una metodología para supervisar la labor de recuperacióndespuésdelaccidente cerebrovascular y determinar losposiblescambiosenlosparámetros de calidad de vida en general, a través de los signos vitales de estas personas, después de larealización de un programa regular de actividad física y recreativa. Estimular laactividad física regular y losbuenos hábitos alimenticios de rescate, destinado a mantenerlasalud física y mental, lo que debería ser una prioridadenelactual, de lo contrario lasociedad, lacarrera será cada vez más tenerunespacioenlarealidad de lapoblación. OBJETIVO: Este proyectotuvo como objetivo aclarar laimportancia de lapráctica y lasactividades físicas como caminar, montar en bicicleta, caminadoracorriendoenlarehabilitación de lacalle. MÉTODOS: Enun principio, se hizo una explicación sobre eltrabajodelproyecto y laconcienciadel paciente enrecuperación. El proyectotambiénincluyólainvestigación y lapreparación de material para laexposición. La recuperacióndel paciente fueevaluado durante elaño 2013, a través delmes de octubre de 2014, laparticipación de las cosas tales como laedad, el peso y la altura para establecerel perfil antropométrico. Finalmente prescrito actividades físicas. CONCLUSIÓN: Estos resultados muestran que laactividad física proporciona una mejoraenlas condiciones generales, anatómico, fisiológico y también se auto-estima y beneficiossociales. La realización exitosa de este trabajoesun incentivo para laexpansión y eldesarrollo de nuevosproyectos de programa.

PALABRAS CLAVE: Accidente cerebrovascular, aeróbicos y calidad de vida.

ATIVIDADES FÍSICAS NA REABILITAÇÃO APÓS ACIDENTE VASCULAR CEREBRAL (AVC) - UMA EXPERIÊNCIA NA CIDADE DE JOINVILLE/SC

RESUMO

INTRODUÇÃO:O acidente vascular cerebral (AVC), ou acidente vascular encefálico (AVE)é caracterizado pela perda rápida de função neurológica, decorrente do entupimento (isquemia) pela interrupção da irrigação sanguínea das estruturas do encéfalo ou rompimento (hemorragia).O paciente com AVC perde grande parte da sua capacidade aeróbia e o exercício físico realizado de forma correta é indispensável na reabilitação do paciente que sofreu um AVC. O trabalho aqui apresentado pretende demonstrar uma metodologia para acompanhar o trabalho de recuperação pós-AVC e verificar as possíveis alterações nos parâmetros de qualidade geral de vida, através dos sinais vitais desses indivíduos, após a realização de um programa regular de atividade física e recreativa.O incentivo à prática de atividade física regular e o resgate de bons hábitos alimentares, visam a manutenção da saúde física e mental, o que deve ser prioridade na sociedade atual, caso contrário, o AVC terá cada vez mais espaço na realidade da população.OBJETIVO: Este projeto teve como objetivo esclarecer a importância da prática e atividades físicas tais como caminhada, bicicleta, esteira o correr na rua para reabilitação do paciente. METODOLOGIA: Inicialmente, foi feito uma explanação sobre o projeto de trabalho e a conscientização do paciente em recuperação. O projeto envolveu também a pesquisa e confecção de material para exposição. O paciente em recuperação foi avaliado durante o no ano de 2013, até o mês de outubro de 2014, envolvendo itens como idade, massa corporal e estatura para o estabelecimento do perfil antropométrico. Por fim prescritas atividades físicas.CONCLUSÃO: Tais resultados comprovam que atividades físicas proporcionam melhoria nas condições gerais, anatômico-fisiológicas e também benefícios sociais e de autoestima. O sucesso na realização deste trabalho representa um incentivo para a ampliação do programa e o desenvolvimento de novos projetos.

PALAVRAS CHAVE: Acidente Vascular Cerebral, Aeróbia e Qualidade de vida.