

59 - ANALYSIS OF PRE AND POST INTERVENTION BMI AQUATIC PHYSIOTHERAPY IN MORBIDLY OBESE PRE BARIATRIC SURGERY

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INTRODUCTION

According Claudino and Zanella (2005) interpretation of the condition of obesity has varied over time as the cultural and scientific force. Obesity as a health problem not existed when food shortages and high physical activity practiced by man, but the selection of individuals with organic mechanisms with more efficient energy storage method provides the evolution of societies, their coming. Due in large part, the industrial revolution, accompanied by changes in lifestyle (less physical activity and diet with higher energy content) body weight of populations is changing.

The World Health Organisation (WHO) defines "overweight" as excess body weight and "obesity as excess body fat, taking into account the body mass index (BMI) which is defined by dividing body weight (kg) by the square of height (in meters). Thus, the WHO defines overweight when their BMI is between 25 and 29.9 kg / m² and obesity, when BMI is greater than 30kg / m².

An intervention that is currently hitting the obese population is the attempt of reducing body weight through stomach reduction surgery, known as bariatric surgery.

The physiotherapist plays an important role, working with the multidisciplinary team in the pre-and post-operatively, due to high incidence of complications in the postoperative period, responsible for increased morbidity and mortality in this period (SARMENTO, 2007).

The therapeutic tools for weight management are: dietary intervention, physical activity, changing habits, pharmacotherapy and bariatric surgery

According to Blair et al (1994), Bouchard et alli (1994); Yazbek & Battistella (1994), quoted by Guedes (1995), physical activity, aimed at reducing body weight, improves cardiovascular capacity, improvement of respiratory capacity improve the quality of life and has the following physiological effects: elimination of excess fat reserves, in addition to facilitating the distribution of body fat that will encourage a healthier pattern, improves the performance of the heart to produce the energy needs of myocardium by reducing heart rate and blood pressure, increases pulmonary ventilation by gain in minute volume and reduction in respiratory rate and improves the structure and function of ligaments, tendons and joints;

An example of aerobic activity that has been widely used and has brought plenty of positive results is hydrotherapy, which is a form of therapy in the water and this is a way different from Earth. When inserted in this new environment the body is subjected to different physical forces and consequently performs a series of physiological adaptations (Caromano et al., 2003).

The weekly frequency of aerobic activities are set 3 to 5 times per week, with an estimated time of 20 to 60 minutes (exercise involving continuous or discontinuous). The monitoring of this activity should be done with the systematic monitoring of the following data: vital signs (blood pressure, heart rate, respiratory rate, oxygen saturation), Table of Subjective Stress and Borg dyspnea. (CAPUTO, 2009)

The physical forces of water play a central role in the body during exercise practice, causing changes in the cardiorespiratory system, improving cardiac efficiency and consequently resulting in minor changes in heart rate (HR) in response to peripheral vasoconstriction and diversion of blood to active tissues (Kruel, 2000; Caromano et al., 2003).

Immediately after immersing the body suffers the action of hydrostatic pressure, increasing blood flow, centralizing the bulk of the lower limbs for large parts of the thorax, indicating improved efficiency in the mechanisms responsible for the improvement of venous return. (FILKENSTEIN et al., 2005).

The hydrostatic pressure is a fundamental element for the physiological responses during the practice of gymnastics. It helps to correct posture in respiratory rehabilitation, the knowledge body in balance and also in venous return. Another important element is the resistance of water, which provides important influence on improving physical fitness, energy expenditure and reducing the impact suffered by the joints .. (Kruel, 2000; Caromano et al., 2003).

The purpose of this study is to analyze the variance in BMI before and after physical therapy of the patients who preoperatively in liquid medium.

MATERIALS AND METHODS

The treatment was performed at the Rehabilitation Centre of Assisi School Gurgacz - FAG, Cardiopulmonary Physical Therapy in gyms and pool therapy. The sample consisted of three women from 18 to 50 anoscom BMI above 45. All patients signed an informed consent. They were previously evaluated by the gastroenterologist, duly forwarded FAG for physiotherapy. All are in the queue to perform bariatric surgery. The training program was developed from the theoretical framework of the year 1997 to 2010. We ran 15 calls at a frequency of three times per week, for about 50 minutes each in a therapeutic pool at 34 ° C with 150 meters depth by performing the treatment at different depths, based on literature through kinesiotherapy adapted to the water environment with emphasis on aerobic work. The intensity calculated for the energy expenditure was 50% of maximal HR, Perceived Exertion Scale moderate and control the signs and symptoms. All were previously adapted to the water. Every 5 minutes were monitored: heart rate, oxygen saturation, perceived exertion scale of signs and symptoms. The schedule of treatment was: 5 minutes of global warming with stretching and walking in water, 15 minutes of aerobic workout with the upper limbs, 15 minutes of aerobic workout with the legs and 5 minutes of stretching with global slowdown.

For appointments hydrotherapeutic was used the following protocol, developed by research collaborators. The first 5 minutes of heating was composed of: Hiking in both directions with the water resistance acting directly and stretching global; Race with alternating high knees clenched fists; Running with alternating high knees, hands open, jumping moving forward water at shoulder level; Jumping in place, moving closer and legs.

The exercises for the upper limbs were based on literature Bates and Hanson (1999): Pull - Push - Working muscles: biceps, triceps, flexors - extensors of the forearms. When pulling, palm facing downwards, while pushing with the palm facing upward. Using the physical principles of water as resistance; arms forward with palms facing, driving them away, pushing the

water with the backs of hands back (inspired). Attach them to the front, the water resistance on the palms (expiry); hands resting on the boards, running in place, moving them forward and backward. The board is currently used as a material to resist; Skip supporting hands lightly on the boards, extending their arms, push - put the board into the water

close to the chest. Extend your arms to bring the water board near the breast, resetting the motion; Running in place, moving arms under water, moving forward behind. Muscular work: arms and legs. Dumbbells are used as resistance for greater energy expenditure and increase muscle strength.

The exercises of lower limbs: Cycle - Working muscle: quadriceps, the hamstring. Pull the right knee up, extend your leg, toes touching the ground, restarting the movement, abduction-adduction - Muscle Work: lateral and inner thigh. Holding the edge, lift one leg extended and the back side (right then left), kicking the front crawl - Muscle Work: posterior thigh muscles and anterior; Plie - Hold the rail, extend your legs bend; Skip departing the United legs - Muscle Work: internal and external muscles of the thigh, the quadriceps. Small game: Pass the ball over the head and between his legs. The last (walking jumping, swimming, running) is placed at the front, when the first get ahead, the team wins; Pass the ball laterally, the latter should (running, jumping, swimming, etc.). Go to the basket, re putting themselves forward; game of dodgeball.

Downturn: global Stretching with Pilates technique de Water. This program creatively adapts Pilates exercises for the pool. Stretches the entire body with exercises and conditioning documents, building a stronger core (abdominal region and back), moving from the inside out. The postures used are as follows: Stand with the aid of a cane in the upper limbs, open arms to the side and keep the torso rotates to the same side and the other arm touches the bat. Held at the expiration time of movement and inspiration in the back of it; On foot, without the aid of floats, is held to kick back and forth. Alternating legs. In the same previous position associated with the upper limbs.

The first and last sessions were used to conduct the assessment and reassessment of patients using the balance GLASS G Tech 4 180 FB Digital to measure body weight in soil, and measuring tape to measure the height of participants before and after physiotherapeutic intervention aquatic totaling 17 sessions.

RESULTS AND DISCUSSION

Physical therapy program before the average body weight of patients was 120.03kg and after the intervention, the average was no difference significantiva 120.03kg. The mean BMI was 45.98 in the evaluation and after physical therapy intervention was 45.99 with no significant difference. This study shows that the participants can be considered as obese according to WHO figures, where the rate of normal BMI is between 18.5 and 25.

The body mass index (weight/height²) has been recommended as a good method to evaluate obesity both in children and adolescents and adults. Obesity can cause psychological suffering due to social pressure for a slender body, and is also likely that a poor perception of self weight, obesity brings with or without functional impairment. The discrepancies between the body mass index and body weight "ideal" can lead to negative emotional states, such as disappointment and dissatisfaction, placing individuals at risk for trouble and often feel isolated or discriminated (LEÓN et al., 2005).

Bariatric surgery is accepted now as the most effective tool in controlling and treating obesity. Among the main benefits of this surgery can stress the maintenance of weight loss and long-term improvement of the diseases associated with improvement in quality of life. According to the American Society for Bariatric Surgery (ASBS) in 2002 were registered 73,000 bariatric surgeries in the United States. They are candidates for surgery, according to consensus criteria of 1991 of the National Institute of Health, patients with a BMI greater than or equal to 40 kg / m² and patients with BMI between 35 and 39.9 kg/m² with some morbidity associated with obesity.

OBESITY IS A CHRONIC DISEASE THAT RESULTS FROM A STATE OF INEQUALITY BETWEEN

the calories eaten and calories expended by the subject, leading to excessive accumulation of fat in the body (Fauci et al., 2009). Ribeiro et al (2010) did a study where there is an average BMI of 40.53 kg/m² in the initial evaluation, and 39.33 at 6 months of treatment. Most were female, aged between 15 and 64 years. This epidemiological profile confirms the recent studies where the age was between 18 and 64 (Carmo et al., 2006) and where it appeared that women exhibited a higher percentage of BMI (15.4%) than men (12.9%) (Caramel et al., 2000). This trend toward gender appear to be from childhood, where girls between 7 and 9 years showed the highest percentage of overweight / obesity (33.7%) than boys (29.4%) . For the BMI analysis it appears that this has decreased over the 6-month study showing that the therapeutic goal was met as opposed to the proposed study, where BMI had no significant result showing that would be ideal to repeat the study with longer duration of treatment so that they have positive results.

Moulin et al (2006) says that in Brazil, epidemiological studies show that the evolution of obesity is rising, with 40% of adults are overweight. Weight loss is routinely recommended for individuals with excess weight in order to reverse or prevent these adverse consequences related to obesity. Being a chronic disease requiring ongoing treatment and monitoring.

CONCLUSION

This study did not respond to the research objectives, which showed no decrease in BMI after aquatic physical therapy intervention. It is suggested to repeat the study with a larger sample of subjects and more sessions of care due to lack of studies in this area.

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ANALYSIS OF PRE AND POST INTERVENTION BMI AQUATIC PHYSIOTHERAPY IN MORBIDLY OBESE PRE BARIATRIC SURGERY

ABSTRACT

Introduction Obesity is an excess of body fat that often causes significant harm to health. The most widely used parameter for measuring obesity is the Body Mass Index (BMI). Morbid obesity is established when the BMI is above 40 kg/m² (average 45kg above ideal weight). Objective: To evaluate the effect of aquatic therapy in BMI of obese patients in the preoperative bariatric surgery. Methods The treatment was performed at the Rehabilitation Centre of Assisi School Gurgacz - FAG, gymnasiums of Cardiopulmonary Physical Therapy and therapeutic pool in the period from June to October 2010. The sample consisted of three women aged 18 to 50 years, previously evaluated by the gastroenterologist, duly forwarded FAG for physical therapy and released for physical activity in a therapeutic pool, where all were in the queue to perform bariatric surgery . The first and last sessions were used to conduct the assessment and reassessment of patients. The statistical analysis was made using percentages and averaged. Results: This study did not respond to the research objectives, which showed no decrease in BMI after aquatic physical therapy intervention. Conclusion: We conclude that this study did not generate significant results for the search because there was no decrease in body weight. It is suggested to repeat the study with a larger sample of subjects and a greater number of visits.

KEYWORDS: Aquatic Physical Therapy, BMI, Bariatric Surgery

ANALYSE DE PRE ET POST INTERVENTION IMC AQUATIQUES PHYSIOTHERAPIE EN OBESITÉ MORBIDE PRE BARIATRIQUES CHIRURGIE

RÉSUMÉ

Introduction L'obésité est un excès de graisse corporelle qui entraîne souvent des dommages significatifs à la santé. Le paramètre le plus largement utilisé pour mesurer l'obésité est l'Indice de Masse Corporelle (IMC). L'obésité morbide est établie lorsque l'IMC est supérieur à 40 kg/m² (45 kg en moyenne au-dessus du poids idéal). Objectif: évaluer l'effet de la thérapie aquatique de l'IMC des patients obèses dans la chirurgie bariatrique préopératoire. Méthodes Le traitement a été réalisé au Centre de réadaptation d'Assise Ecole Gurgacz - FAG, les gymnases de cardio-thérapie physique et une piscine thérapeutique dans la période de Juin à Octobre 2010. L'échantillon était composé de trois femmes âgées de 18 à 50 ans, déjà évalués par le gastro-entérologue, dûment transmis FAG pour la thérapie physique et libéré de l'activité physique dans une piscine thérapeutique, où tous étaient dans la file d'attente pour la chirurgie bariatrique . La première et dernière sessions ont été utilisées pour effectuer l'évaluation et la réévaluation des patients. L'analyse statistique a été faite en utilisant des pourcentages et des moyennes. Résultats: Cette étude n'a pas répondu aux objectifs de recherche, qui n'a montré aucune diminution de l'IMC après l'intervention de thérapie aquatique physique. Conclusion: Nous concluons que cette étude n'a pas produire des résultats significatifs pour la recherche parce qu'il n'y avait pas de diminution du poids corporel. Il est suggéré de répéter l'étude avec un échantillon plus large de sujets et un plus grand nombre de visites.

MOTS-CLÉS: aquatique thérapie physique, l'IMC, la chirurgie bariatrique

ANÁLISIS DE PRE Y POST INTERVENCIÓN FISIOTERAPIA ACUÁTICA IMC EN OBESOS MÓRBIDOS PRE BARIÁTRICA CIRUGÍA

RESUMEN

Introducción La obesidad es un exceso de grasa corporal que con frecuencia causa un daño significativo a la salud. El parámetro más utilizado para medir la obesidad es el Índice de Masa Corporal (IMC). La obesidad mórbida se establece cuando el IMC es superior a 40 kg/m² (45 kg promedio por encima del peso ideal). Objetivo: evaluar el efecto de la terapia acuática en el IMC de los pacientes obesos en el preoperatorio de cirugía bariátrica. Métodos El tratamiento se llevó a cabo en el Centro de Rehabilitación de Asís Escuela Gurgacz - FAG, gimnasios de cardiopulmonar Terapia Física y piscina terapéutica en el periodo de junio a octubre de 2010. La muestra está formada por tres mujeres de entre 18 y 50 años, previamente evaluados por el gastroenterólogo, debidamente remitido FAG para la terapia física y libertad para la actividad física en una piscina terapéutica, en el que todos estaban en la cola para realizar la cirugía bariátrica . La primera y la última se utiliza para realizar la evaluación y reevaluación de los pacientes. El análisis estadístico se realizó mediante porcentajes y promedio. Resultados: Este estudio no responde a los objetivos de investigación, que no mostraron una disminución en el IMC después de la intervención de fisioterapia acuática. Conclusión: Se concluye que este estudio no generó importantes resultados para la búsqueda porque no había ninguna disminución en el peso corporal. Se sugiere repetir el estudio con una muestra mayor de sujetos y un mayor número de visitas.

PALABRAS CLAVE: La fisioterapia acuática, Cirugía IMC, bariátrica

ANÁLISE DO IMC PRÉ E PÓS INTERVENÇÃO FISIOTERÁPICA AQUÁTICA EM OBESOS MÓRBIDOS PRÉ CIRÚRGICOS BARIÁTRICOS**RESUMO**

Introdução Obesidade é um excesso de gordura corporal que freqüentemente causa significativo dano à saúde. O parâmetro mais utilizado para mensuração da obesidade é o Índice de Massa Corporal (IMC). A obesidade mórbida é estabelecida quando o IMC é superior a 40 kg/m² (em média 45kg acima do peso ideal). Objetivo: Avaliar a repercussão da fisioterapia aquática no IMC de pacientes obesos no pré-operatório de cirurgia bariátrica. Metodologia O tratamento foi realizado no Centro de Reabilitação da Faculdade Assis Gurgacz - FAG, nos ginásios de Fisioterapia Cardiopulmonar e piscina terapêutica no período de junho a outubro de 2010. A amostra foi composta por 3 mulheres de 18 a 50 anos, avaliadas previamente pelo médico gastroenterologista, devidamente encaminhadas a FAG para tratamento fisioterapêutico e liberadas para a prática de atividade física em piscina terapêutica, onde todas encontravam-se na fila para realização de cirurgia bariátrica. A primeira e a última sessão foram utilizadas para realizar a avaliação e a reavaliação dos pacientes. A análise estatística dos resultados foi elaborada por porcentagem simples e cálculo da média. Resultados: Este estudo não respondeu aos objetivos da pesquisa, onde não houve diminuição do IMC pós intervenção fisioterapêutica aquática. Conclusão: Conclui-se que este estudo não gerou resultados significativos para a pesquisa pois não houve diminuição do peso corporal. Sugere-se a repetição do estudo com uma amostra maior de indivíduos e um maior número de atendimentos.

PALAVRAS-CHAVE: Fisioterapia Aquática, IMC , Cirurgia Bariátrica