# 32 - COMPARISON BETWEEN THE EFFECT OF AN ACUTE RESISTANCE EXERCISE SESSION IN SERIES METHOD WITH INTENSE AND LIGHT LOAD ON BLOOD PRESSURE AND DOUBLE PRODUCT

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## INTRODUCTION

Elevation of blood pressure represents an independent, linear and continuous risk factor to cardiovascular disease. In 2007 there were 308,466 deaths from circulatory diseases, being 12.8% caused by hypertension, also population-based surveys were conducted in some cities in Brazil, where the prevalence of hypertension was shown (>140/90 mmHg) de 22,3% to 43,9% (VI BRAZILIAN GUIDELINES FOR HYPERTENSION, 2010, V BRAZILIAN GUIDELINES FOR HYPERTENSION, 2007).

There are some factors that may be considered risk factors for hypertension such as age, gender and ethnicity, overweight and obesity, excessive salt intake, alcohol intake, physical inactivity, and genetic predisposition and socioeconomic factors that may contribute in families with unhealthy lifestyle (VI BRAZILIAN GUIDELINES FOR HYPERTENSION, 2010).

According to the III Brazilian Consensus on Hypertension, measures for non-pharmacological treatment of hypertension have also proven efficacy in reducing BP by adopting a healthy lifestyle through proper eating habits and physical exercise. From the pharmacological point of view, it is recommended the use of antihypertensive drugs, namely diuretics, beta blockers, centrally acting sympatholytic, calcium channel antagonists, converting enzyme inhibitors and angiotensin receptor antagonists of angiotensin II.

Physical exercise can be defined as any muscular activity that generates strength and disrupts homeostasis, having acute effects, which generates an intense response, but short length and chronic effects which are characterized by slow and prolonged action (SILVERTHORN, 2003).

Resistance exercises (RE) or force exercises are those that contribute to muscle hypertrophy, muscle power, strength and muscular endurance, provided that it is done properly, thereby increasing an individual's potential for sports and activities that require greater strength (AABERG, 2002).

Aaberg (2002) also says that the RE is beneficial to overall health. Currently, the preventive aspects of health care associated with resistance training are reorganized, as well as improvement in athletic and aesthetic performance of practitioners, including hypotensive effects.

The hypotensive mechanisms are numerous and may be related to the modification of baroreflex control and the reduction of alpha-adrenergic responsiveness, and secretion of humoral, hormonal and local substances, leading to peripheral maintenance after exercise, contributing to post-exercise hypotension (PEH) (MOTA, 2006).

Research demonstrates that resistance exercise of different intensities have been effective for the treatment of hypertension (ROCHA; BOMFIM, 2009). However, others have concluded that there was no significant difference in acute response of BP in different exercises with the upper limb in sitting or lying position.

Other authors concluded that the volume, intensity and muscle mass can influence the resistance exercise on PEH. Additionally, in hypertensive patients, both young and old drop in blood pressure is more pronounced when compared to non-hypertensive ones (SANTAELLA, 20030.

Yet, the chronic effect that RE can cause on blood pressure is hypotension, occurring most often after exercise with lower intensity. The applicability of resistance exercise in hypertensive population is a challenging field of research with inconclusive results (FORJAZ, 2003).

The double product (DP) is also a good parameter to evaluate the work of the myocardium to be resultant from systolic blood pressure and heart rate, represented by the equation: DP = SBP X HR (McARDLE, KATCH, KATCH, 2003).

Therefore, the aim of this study was to compare the behavior of blood pressure and double product after 60 minutes of recovery from a session of resistance in series method with 40% and 80% of 1RM in normotensive individuals.

## MATERIALS AND METHODS

Study participants: 12 male volunteers, aged 24,9 ± 2,43; body mass 71,68 ± 5,18kg; height 173 ± 0,16 in; IMC 23,83 ± 1,60 kg/m2.

The inclusion criteria adopted were: 1) all participants were normotensive; 2) had previous experience of at least six months with the ER. (POLITO; SIMÃO; SENNA; FARINATTI, 2003).

The following exclusion criteria were used: a) musculoskeletal or metabolic problems that might limit or contraindicate the practice of programmed exercises; b) use of ergogenic aids; c) use of cigarettes.

All of the participants signed a Free and Informed Consent according to the recommendations of Resolution 196/96 of the National Health Council, and responded negatively to the PAR-Q questionnaire. Before its completion, the present study was assessed and approved by the Ethics Committee of the Assis Gurgacz College. (OPINION 187/2008).

Body mass was measured using a digital scale labeled “Toledo” brand, and height using a wall stadiometer manufactured by “Sanny”, in accordance with the procedures described by Gordon, Chumlea and Roche (1998).

From these measurements the body mass index (BMI) was calculated by the body weight/height quotient, body mass expressed in kilograms (kg) and height in meters (m).

Adiposity was determined by using a scientific fat caliper of “Lange” brand (Cambridge Scientific Industries Inc.; Cambridge, Maryland). The thickness of subscapular, abdominal and triceps skin folds were measured in accordance with the procedures described by Harrison, Bursik, Carter, Johnston, Lohman and Pollock (1988).

The fat percentage was determined by a protocol for three folds (GUEDES; Guedes, 2003). It is noteworthy that the measurement error was within ± 1.0 mm and the test-retest quotient of > 0.95.

The variables measured at rest and after the experimental sessions (80% 1-RM, 40% 1-RM and CONT), every 15 minutes to 60 minutes of recovery were systolic (SBP) and diastolic blood pressure (DBP).

BP measurement was performed using the oscillometric measurement method, using an Automatic Digital Blood Pressure Monitor, Model BP-A3BTO, manufactured by Microlife.

To determine the RE load used, the maximum repetition (1-RM) test was performed. The anthropometry, body composition, 1-RM test and the RE assessments were performed within three non-consecutive days, with and interval of at least 48 hours, at the same time, every day.

The 1-RM testing was conducted in the following machines: leg extension, incline press, legpress45, pulled into the machine, leg curl and rowing machine, all Righetto Fitness Equipment. Through the 1-RM load test, the maximum load possible to carry out the RE session was determined. Before the test, the volunteers performed five minutes of preparatory exercises and stretching with priority to the muscles involved in the test. Each volunteer performed up to five attempts at the test, following an interval of 3 to 5 minutes apart for resynthesis of energy reserves.

The ER sessions were randomized, one with the execution of three series in high-intensity resistance exercise (08 repetitions/exercise X 80% 1-RM) one with low intensity (16 repetitions/exercise X 40% 1-RM) and the other session being the control (CONT) without performing the exercise.

On the day set for the control session, the volunteers attended the gym and had no exercise, but SBP and DBP were collected using the same procedures and times of the RE session.

Data were analyzed using descriptive statistics with mean and standard deviation. Two-way ANOVA for repeated measures was applied for comparison of results within and between experimental sessions with Post-hoc test when necessary to detect possible differences. The significance level was $p<0.05$ and all procedures were performed in the software Statistics for Windows 6.0.

**RESULTS**

Table 1 describes the general characteristics of the sample, with the average values and standard deviations for the variables: Age, Body mass, Height, BMI and Percent Body Fat.

Table 1: General characteristics of the sample

| | Mean | Standard Deviation |
|---|---|---|
| **Age (years)** | 24,9 | 2,43 |
| **Body mass (kg)** | 71,68 | 5,18 |
| **Height (cm)** | 1,73 | 0,04 |
| **BMI (kg/m$^2$)** | 23,83 | 1,60 |
| **% body fat (%)** | 16,84 | 2,99 |

Table 2 presents the results of the comparison of SBP and DBP among the control session, the session of resistance exercise with a load of 40% and resistance exercise session with a load of 80% of 1RM in the series method.

According to the results no significant increase in SBP and DBP in subjects evaluated after the exercise sessions was observed, as well as hypotensive effect was not observed during the recovery period.

Table 2: Comparison of SBP and DBP values in the control session, the session of resistance exercise with a load of 40% and resistance exercise session with a load of 80% of 1RM in the series method.

| | Control Session | | 40% de 1RM | | 80% de 1RM | |
|---|---|---|---|---|---|---|
| | SBP (mmHg) | DBP (mmHg) | SBP (mmHg) | DBP (mmHg) | SBP (mmHg) | DBP (mmHg) |
| **Rest** | 127,18±13,86 | 72,98±8,54 | 125,98±11,63 | 76,28±15,04 | 130,38±8,47 | 74,06±8,05 |
| **Final effort** | 126,17±11,27 | 74,75±9,01 | 138,42±14,92 | 79,17±13,27 | 144,25±36,32 | 87,75±36,12[a] |
| **15 min recovery** | 126,67±12,28 | 68,83±16,24 | 131,00±14,79 | 74,17±12,04 | 125,67±12,06 | 73,08±11,70 |
| **30 min recovery** | 126,00±12,52 | 70,33±8,23 | 128,83±12,57 | 69,92±5,66 | 122,42±8,66 | 67,83±9,51 |
| **45 min recovery** | 124,92±10,94 | 72,92±8,33 | 125,58±19,71 | 75,00±13,18 | 126,58±19,00 | 74,08±11,52 |
| **60 min recovery** | 126,83±10,89 | 77,83±10,81 | 118,67±8,88 | 67,25±3,86 | 123,33±19,09 | 74,08±9,21 |

Table 3 shows the comparison results of double product between 40 and 80% of 1RM sessions. According to the results, no significant difference was found between exercise sessions.

Table 3: Comparison of the values of Double Product between the resistance exercise session with a load of 40% and 80% of 1RM in the series method.

| | Double Product (mmHg.bpm) | |
|---|---|---|
| | 40% de 1RM | 80% de 1RM |
| **Rest** | 9901,87±2279,08 | 9974,72±1427,13 |
| **Final effort** | 14253,00±2626,61 | 15267,50±4206,35 |
| **15 min recovery** | 13572,25±5071,64 | 13232,92±4115,91 |
| **30 min recovery** | 12827,58±6917,82 | 11411,50±4876,03 |
| **45 min recovery** | 10705,00±3863,86 | 10224,75±2315,33 |
| **60 min recovery** | 10782,92±3983,47 | 9306,33±1783,83 |

Table 4 presents the results of the comparison of heart rate between sessions of 40 and 80% of 1RM. According to the results, no significant difference was found between exercise sessions.

Table 4: Comparison of heart rate ± between the control session, the session of resistance exercise with a load of 40% and the session of resistance exercise with a load of 80% of 1RM in the series method.

| | Heart rate (bpm) | |
|---|---|---|
| | 40% de 1RM | 80% de 1RM |
| Rest | 75,66±11,66 | 76,04±7,78 |
| Final effort | 103,00±16,73 | 110,33±23,13 |
| 15 min recovery | 99,00±32,16 | 101,00±27,30 |
| 30 min recovery | 93,00±31,95 | 92,00±32,81 |
| 45 min recovery | 88,33±31,34 | 80,67±12,93 |
| 60 min recovery | 86,25±30,12 | 76,75±13,53 |

**DISCUSSION OF RESULTS**

This study compared the behavior of SBP and DBP at rest and at the end of a resistance exercise session with loads of 40 and 80% (1RM).

According to the results, there was a significant reduction in SBP, when comparing the values from the end of resistance exercise and after 60 minutes of recovery from the session of 80% of 1RM.

It was expected to find the SBP and DBP values higher after the completion of resistance exercise at both intensities, besides observing SBP and DBP values higher in the 80% load. This might be justified because in high-intensity efforts could lead to the Valsalva maneuver, and consequently, the muscle mechanical pressure contracted over the skeletal blood vessels and the intrathoracic pressure generated by the Valsava maneuver would cause an increase in blood pressure (McDOUGALL, McKELVIE, MOROZ, SALE, McCARTNEY, BUICK, 1992).

Consequently, it was expected to observe a hypotensive effect, especially in the 80% of 1RM session since the literature preconizes that the intensity of exercise can influence the magnitude and duration of response (POLITO; SIMÃO; SENNA; FARINATTI, 2003). It is suggested the monitoring of blood pressure for a longer time, since maybe the time of blood pressure measurement in the post-exercise was not sufficient to observe a hypotensive effect (LIZARDO and SIMÕES, 2005).

The results of this study provide significant reductions in SBP compared to the end of the exercise from 60 minutes post-effort. Contrary to this result, Hill, Collins, Cureton (1989), investigated blood pressure responses after a strength training program, observing a significant reduction of DBP after exercise without significant reductions in SBP.

One of the explanations for the observation of the drop in blood pressure after exercise is the fact that there is accumulation of metabolites induced by exercise, one of the main factors responsible for muscle vasodilatation thereby causing decrease of peripheral vascular resistance during and after exercise (McDONALD, 2002).

Studies also suggest that post-resistance exercise hypotension may be influenced by the mass involved in the exercise or hemodynamic aspects related to the distance from the exercised muscle with the heart (HALLIWILL, 2001). The fitness level is also a factor to be considered.

In this study, the volunteers were physically active and experienced in resistance exercise, which would certainly influence on the responses of blood pressure. Confirming this hypothesis, Fisher (2003) noted that only the hypertensive patients present hypotension after resistance exercise. However, in other studies such as Polito, Simão, Senna and Farinatti (2003), post-exercise hypotension was observed in normotensive individuals.

According to the comparison of the values of Double Product between the resistance exercise session with a load of 40% and the resistance exercise session with a load of 80% of 1RM there were no statistically significant differences.

It is found in the literature that the behavior of the double product does not depend only on the intensity of exercise, but also on the type and duration of the physiological and mechanical application. Until recently, there was a chance to consider the aerobic activities for individuals with higher risk of heart events, the most secure, thus, resistance exercises were contraindicated for such individuals (AMERICAN COLLEGE OF SPORTS MEDICINE, 1993).

However, there are reports of studies which show that values of double product in resistance exercises tend to be smaller than those observed in aerobic activities with moderate intensity. For Haslam, McCartney, McKelvie and McDougall (1988), resistance exercise can promote a greater myocardial oxygen consumption lasting about 30 seconds, a value lower than a conventional effort test, for example. Thus, the risks associated with ischemia or compromises in left ventricular function can be considered as relatively small in this type of exercise.

Regarding the comparison of the values of heart rate between the resistance exercise session with a load of 40% and resistance exercise session with a load of 80% of 1RM in the series method, it is concluded that there were no significant differences. This demonstrates that the cardiovascular demand based on the heart rate seems to be similar in both intensities of effort.

Therefore, considering that the results are contradictory to the literature, it is reinforced that the resistance exercise programs might deserve more research to determine a universal reference for its prescription, such as volume, intensity, type of training, equipment, exercise order, recovery, duration and frequency in order to obtain more secure and accurate answers to the practitioner, especially in hypertensive populations.

**CONCLUSION**

It is concluded that hypotensive effect was not observed in any of the loads of resistance exercises, as well as there were no significant differences among systolic, diastolic blood pressure and double product between the loads of 40 and 80% of 1RM.

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**COMPARISON BETWEEN THE EFFECT OF AN ACUTE RESISTANCE EXERCISE SESSION IN SERIES METHOD WITH INTENSE AND LIGHT LOAD ON BLOOD PRESSURE AND DOUBLE PRODUCT**

**ABSTRACT**

Introduction: Some studies have shown that a single session of resistance exercise can cause a lasting drop in blood pressure during recovery period after exercise, being a form of non-drug treatment of individuals with high blood pressure. Nevertheless, the literature is still controversial as to the prescription of resistance exercise for this purpose. Objective: To compare the behavior of blood pressure after 60 minutes of recovery from a resistance exercise session in series method with 40% and 80% of 1RM. Methods: Study participants were 12 normotensive men aged 24,9 ± 2,43; body mass 71,68 ± 5,18kg; height 173 ± 0,16 in; IMC 23,83 ± 1,60 kg/m2 and % fat of 16,84±2,99. The volunteers attended the laboratory for four trial sessions of weight training on alternated days: 1 – maximum load (1-RM) in six exercises (leg extension, bench press machine, leg curl and rowing machine), 2, 3 and 4 – in random order for the experimental sessions: 3 series of 8 repetitions of resistance exercise at 80% 1-RM session, 3 series of 16 repetitions of resistance exercise at 40% 1-RM session and a control (CONT) without performing the exercise. The variables measured at rest and after the experimental sessions, within 60 minutes of recovery were systolic blood pressure (SBP) and diastolic. Data were analyzed using descriptive statistics with mean and standard deviation. Two-way ANOVA for repeated measures was applied for comparison of results within and between experimental sessions with Post-hoc de Tukey test when necessary to detect possible differences ($p < 0,05$). The software Statistics for Windows 6.0 was employed. Results: According to the results, it was observed significant reduction in SBP, when comparing the final values of resistance exercise with a load of 80% of 1RM with SBP after 60 minutes of recovery. Regarding the double product, no significant change was observed. As for comparison between blood pressure and double product between exercise sessions at 40 and 80% of 1RM, there were no significant differences either. Conclusion: It is concluded that the hypotensive effect was not observed in any of the loads of resistance exercises, as well as no significant differences between systolic blood pressure, diastolic blood pressure and double product between the loads of 40 and 80% of 1RM.

**KEY WORDS:** Hypotension, resistance exercise, double productRESUME

**COMPARAISON ENTER L'EFFET AIGU D'UNE SÉANCE DE MUSCULATION DANS LA MÉTHODE SÉRIELLE AVEC CHARGE INTENSE ET LÉGÈRE SUR LA PRESSION ARTÉRIELLE ET DOUBLE PRODUIT**

**RÉSUMÉ**

Introduction: Quelques études ont démontré qu'une seule séance de musculation est capable de provoquer une chute prolongée de la pression artérielle dans le temps de récupération écoulé après l'exercice, ce qui peut constituer une forme de traitement non médicamenteux des personnes souffrant d'hypertension artérielle. Cependant, la littérature est encore controversée par rapport à la prescription d'exercices en résistance à ce but. Objectif: Comparer le comportement de la pression artérielle après 60 minutes de récupération d'une séance d'exercice sériel en résistance avec 40% et 80% de 1RM. Méthodologie: 12 hommes avec pression artérielle normale âgés de 24,9±2,43 ans, masse corporelle 71,68± 5,18 kg, stature de 173±4 cm, IMC de 23,83±1,60 kg/m2 et graisse de 16,84±2,99 ont fait partie de cet étude. Les participants sont allés au laboratoire pour quatre séances experimentelles dans des jours alternés: 1 – determiner la charge maximale (1-RM) en six exercices (leg extension, développé couché, presse à cuisses, tirage nuque, leg curl arrière et tirage sol); 2, 3 et 4 – dans un ordre randomisé pour les séances expérimentales: 3 serielle de 8 répétitions de musculation à 80% 1-RM, 3 serielle de 16 répétitions de musculation à 40% 1-RM et une séance contrôle (CONT) sans effectuer l'exercice. Les variables mesurées au repos et après les séances expérimentales, jusqu'à 60 minutes de récupération, ont été la pression artérielle systolique (PAS) et diastolique (PAD). Les données ont été analysées à l'aide de statistiques descriptives avec la moyenne et l'écart type. ANOVA two-way pour mesures répétées a été appliqué pour la comparaison des résultats obtenus entre et dans chacune des séances expérimentales avec Post-hoc de Tukey lorsque cela est nécessaire pour détecter d'éventuelles différences ($p <0,05$). Le logiciel Statistic for Windows 6.0 a été mis en place. Résultats: Selon les résultats, il a été observé une réduction importante de la PAS, lorsque l'on compare les valeurs de la fin des exercices en résistance avec une charge de 80% de 1RM avec la PAS après 60 minutes de récupération. En ce qui concerne le double produit aucun changement important n'a été observé. Quant à la comparaison entre la pression artérielle et le double produit entre les séances de musculation à 40% et 80% de 1RM, aucune différence importante n'a été constatée. Conclusion : Nous concluons que l'effet hypotenseur n'a pas été observé dans aucune des charges d'exercices en résistance, ainsi qu'aucune différence importante n'a été observée entre la pression artérielle systolique, la pression artérielle diastolique et le double produit entre les charges de 40% et 80% de 1RM.

**MOTS CLÉ :** L'hypotension ; exercice en résistance ; double produit.

**COMPARACIÓN ENTRE EL EFECTO AGUDO DE UNA SESIÓN DE EJERCICIOS RESISTIDOS EN EL MÉTODO SERIADO CON CARGA INTENSA Y LEVE SOBRE LA PRESIÓN ARTERIAL Y DOBLE PRODUCTO**

**RESUMEN**

Introducción: Algunos estudios han demostrado que una única sesión de ejercicios físicos resistidos puede provocar una caída presórica duradera en el periodo de recuperación después del ejercicio, siendo una forma de tratamiento no medicamentoso de individuos con presión arterial elevada. No obstante, la literatura todavía es controversa cuanto a la

prescripción del ejercicio resistido con esta finalidad. Objetivo: Comparar el comportamiento de la presión arterial después de 60 minutos de recuperación de una sesión de entrenamiento de ejercicio resistido en método seriado con 40% y 80% de 1RM. Metodología: Hicieron parte del estudio 12 hombres normotensos con edad de 24.9±2,43 años, masa corporal 71,68±5,18 kg, estatura de 173±4 cm, IMC de 23,83±1,60 kg/m2 y % grasa de 16,84±2,99. Los voluntarios comparecieron al laboratorio de musculación durante cuatro sesiones experimentales en días alternados: 1 – determinación de la carga máxima (1-RM) en seis ejercicios (extensión de piernas en máquina, press de brazos en máquina, prensa de piernas, pull over con polea alta, flexión femoral, remo en máquina); 2, 3 y 4 – en orden randomizado para las sesiones experimentales: 3 series de 8 repeticiones de ejercicio resistido a 80% 1-RM, 3 series de 16 repeticiones de ejercicio resistido a 40% 1-RM y una sesión control (CONT) sin la realización de ejercicio. Las variables mensuradas en reposo y después de las sesiones experimentales, hasta 60 minutos desde la recuperación, fueron presión arterial sistólica (PAS) y diastólica (PAD). Los datos fueron analizados a través de estadística descriptiva, con valores medios y desviación estándar. ANOVA two-way para medidas repetidas fue aplicada para comparación de resultados obtenidos intra y entre sesiones experimentales con Post-hoc de Tukey cuando necesario para detectar las posibles diferencias ($p < 0,05$). Fue empleado el software Statistic for Windows 6.0.Resultados: De acuerdo con los resultados, fue verificada una reducción significativa en PAS, al comparar los valores del final del ejercicio resistido con carga de 80% de 1RM con PAS después de 60 minutos de recuperación. En relación al doble producto, no hubo diferencias significativas. Conclusión: Se concluye que no fue observado efecto hipotensor en ninguna de las cargas de ejercicios resistidos, y tampoco fueron observadas diferencias significativas entre la presión arterial sistólica, diastólica y doble producto entre las cargas de 40 y 80% de 1RM.

**PALABRAS CLAVE:** Hipotensión, ejercicio resistido, doble producto

**COMPARAÇÃO ENTRE O EFEITO AGUDO DE UMA SESSÃO DE EXERCÍCIOS RESISTIDOS NO MÉTODO SERIADO COM CARGA INTENSA E LEVE SOBRE A PRESSÃO ARTERIAL E DUPLO PRODUTO**

**RESUMO**

Introdução: Alguns estudos têm demonstrado que uma única sessão de exercícios físicos resistidos pode provocar uma queda pressórica duradoura no período de recuperação após o exercício, sendo uma forma de tratamento não-medicamentoso de indivíduos com pressão arterial elevada. Contudo, a literatura ainda é controversa quanto a prescrição do exercício resistido com esta finalidade. Objetivo: Comparar o comportamento da pressão arterial após 60 minutos de recuperação de uma sessão de treinamento de exercício resistido no método seriado com 40% e 80% de 1RM. Metodologia: Fizeram parte do estudo 12 homens normotensos com idade de 24,9±2,43 anos, massa corporal 71,68± 5,18 kg, estatura de 173±4 cm, IMC de 23,83±1,60 kg/m2 e % gordura de 16,84±2,99. Os voluntários compareceram ao laboratório de musculação durante quatro sessões experimentais em dias alternados: 1 - determinação da carga máxima (1-RM) em seis exercícios (cadeira extensora, supino reto na máquina, legpress, puxada na máquina, cadeira flexora e remada máquina); 2, 3 e 4 – em ordem randomizada para as sessões experimentais: 3 séries (8 repetições de exercício resistido a 80% 1-RM e 16 repetições a 40%1RM) e uma sessão controle (CONT) sem a realização de exercício. As variáveis mensuradas no repouso e após as sessões experimentais, até 60 minutos da recuperação, foram a pressão arterial sistólica (PAS) e diastólica (PAD). Os dados foram analisados através de estatística descritiva, com valores de média e desvio padrão. ANOVA two-way para medidas repetidas foi aplicada para comparação dos resultados obtidos intra e entre sessões experimentais com Post-hoc de Tukey quando necessário para detectar as possíveis diferenças ($p < 0,05$). Foi empregado o software Statistic for Windows 6.0. Resultados: De acordo com os resultados, foi verificado redução significativa na PAS, ao comparar os valores do final do exercício resistido com carga de 80% de 1RM com a PAS após 60 minutos de recuperação. Em relação ao duplo produto, não foi observado nenhuma modificação significativa. Quanto à comparação entre a pressão arterial e o duplo produto entre as sessões de exercício a 40 e 80% de 1RM, observou-se que não houve diferenças significativas. Conclusão: Conclui-se que não foi observado efeito hipotensor em nenhuma das cargas de exercícios resistidos, bem como não foram observadas diferenças significativas entre a pressão arterial sistólica, diastólica e duplo produto entre as cargas de 40 e 80% de 1RM.

**PALAVRAS-CHAVE:** Hipotensão, exercício resistido, duplo produto