

C70 | RESISTANCE EXERCISE IN AN ANIMAL MODEL OF MAMMARY CANCER TREATED WITH DOXORUBICIN: HEMATOLOGICAL RESULTS

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Introduction: Doxorubicin (DOX) is one of the most effective antitumor drugs for breast cancer treatment. DOX is associated to high toxicity in multiple organs and tissues. This study aimed to assess the effects of resistance exercise training (RET) in the hematological parameters of rats with mammary cancer treated with DOX.

Material & Methods: Wistar Rats were divided into six groups: I (sedentary, SED), II (SED+N-methyl-N-nitrosourea (MNU)), III (SED+MNU+DOX); IV (exercised, EXE); V (EXE+MNU) and VI (EXE+MNU+DOX). MNU (50 mg/Kg) was intraperitoneally injected at seven weeks of age. DOX was given intraperitoneally (cumulative dose 9 mg/Kg, twice a week, for 3 weeks). The RET was performed following a ladder climbing protocol (4-8 climbs, 8-12 steps, 2 min rest), 3 times/week, for 8 weeks. Animals were weighed once a week. Loads were attached to their tails and were progressively increased according to their performance. The ponderal weight gain (PWG) of each animal was determined using the following formula: $\text{Final body weight} - \text{Initial body weight} / \text{Final body weight} \times 100$. At sacrifice, 48 h after the last exercise session, blood samples were collected for hematologic analysis. The procedures were approved by UTAD ORBEA. Data were analysed using SPSS 27 and values were statistically significant at $p < 0.05$.

Results: The mean food and water consumption was lower in the last week of the experiment when compared with the first week, in all groups. No differences were observed among groups ($p > 0.05$). Initial and final animals' body weights were similar among groups. The body weight increased throughout the experimental protocol in all groups. Although the differences did not reach the level of statistical significance, the PWG was slightly higher in group VI, when compared with group III ($p > 0.05$). The hemoglobin, hematocrit and total proteins levels were slightly lower in groups treated with doxorubicin (groups III and VI), when compared with groups control (groups I and IV) or those exposed only to MNU (groups II and V) ($p > 0.05$).

Conclusions: Neither doxorubicin nor the RET influenced the intake of both water and food, leading to no real difference in body weight. RET seems to provide neither improvement nor detrimental effects on hematological parameters in DOX treated rats.

Acknowledgements: This work was supported by National Funds by FCT - Portuguese Foundation for Science and Technology, under the projects UIDB/04033/2020 (CITAB) and LA/P/0126/2020 (Inov4Agro).