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Title

Muscle Fiber Cross-sectional Area Is Unaffected 14 Days Following A Clinical Dose Of Radiation: 1360 Board #13 June 2, 9: 00 AM - 10: 30 AM.

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Table 1. Mean for RLV (L) across trials on land and submerged in water, and of FIR, ROW, WIN, LOW, and trials to criteria in each condition.

	RLV Land	RLV Submerged
Trial 1	1.21 ± 0.30	1.11 ± 0.33
Trial 2	1.14 ± 0.28	1.08 ± 0.27
Trial 3	1.11 ± 0.31	1.09 ± 0.31
Trial 4	1.13 ± 0.31	1.09 ± 0.27
Trial 5	1.12 ± 0.29	1.12 ± 0.33
FIR	1.19 ± 0.28	1.11 ± 0.29
Trial to Criteria	2.00 ± 0.00	2.00 ± 0.00
ROW	1.13 ± 0.26	1.02 ± 0.28
Trial to Criteria	2.75 ± 0.95	2.65 ± 1.01
WIN	1.05 ± 0.26	1.02 ± 0.29
Trial to Criteria	2.65 ± 0.86	2.44 ± 0.63
LOW	0.99 ± 0.26	0.98 ± 0.28
Trial to Criteria	3.97 ± 0.82	4.07 ± 0.88

CONCLUSION: For healthy, young male subjects the number of trials needed to determine RLV depends upon the criteria selected. Based on means and standards deviations, it is recommended that at least 4 trials be used for ROW and WIN, and at least 5 trials for LOW. Additionally, FIR is not an appropriate criterion due to changes in RLV in subsequent trials.

C-26 Free Communication/Poster - Cancer, Exercise, and Muscle

Thursday, June 2, 2016, 7:30 AM - 12:30 PM

Room: Exhibit Hall A/B

1360 Board #13 June 2, 9:00 AM - 10:30 AM

Muscle Fiber Cross-sectional Area Is Unaffected 14 Days Following A Clinical Dose Of Radiation

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(No relationships reported)

Skeletal muscle regeneration has previously been shown to be blunted following a dose of 7 Gy gamma irradiation with cardiotoxin injury. It has yet to be established if the same dose of radiation effects non-injured skeletal muscle.

PURPOSE: The objective of the current study was to investigate the effects of a 7 Gy dose of irradiation on the cross-sectional area (CSA) of the tibialis anterior (TA).

METHODS: Adult male mice (C57BL/6) were assigned to one of 6 groups: 1) 4 day control, 2) 4 day irradiated (IRR), 3) 7 day control, 4) 7 day IRR, 5) 14 day control, 6) 14 day IRR. Each mouse was injected with saline before irradiation as part of a larger study. Following injection, mice in the irradiation groups were exposed to a dose of 7 Gy of gamma irradiation which is considered to be a clinically relevant dose. Following each time period the TA was removed and prepared for histological analysis by hematoxylin and eosin staining. Approximately 100 fibers of each muscle sample were analyzed with ImageJ software to estimate average fiber CSA. Data were analyzed by one-way ANOVA in GraphPad Prism.

RESULTS: No differences were found between control and IRR mean fiber size at any of the time periods.

CONCLUSIONS: These results indicate that a dose of 7 Gy of gamma irradiation may blunt myogenesis following cardiotoxin injury but does not alter fiber CSA up to 14 days following exposure.

1361 Board #14 June 2, 9:00 AM - 10:30 AM

Role of Testosterone on Muscle Protein Synthesis during Prostate Cancer Treatment

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Androgen deprivation therapy (ADT) is a common treatment for prostate cancer (PCa), but low testosterone levels result in muscle loss. Muscle protein synthesis (MPS) stimulated after resistance training may help to partially reverse muscle loss. However, some studies show attenuated load-mediated hypertrophy during ADT whereas others suggest that testosterone is not essential for normal accretion of lean mass.