Animal Care | Systems

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the Academy of Athens, Greece

3rd East Mediterranean Regional ICLAS Symposium, Istanbul, Turkey, June 13-15, 2011

Choosing resting areas in different individually ventilated mouse caging systems

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INTRODUCTION

Individually ventilated caging systems are getting more and more popular in the modern laboratory animal facilities, especially in small laboratory rodent housing. Depending on the way the air is supplied, forced air and motor free individually ventilated caging systems for mice are commercially available. Housing conditions within these cages are very much influenced depending on the intra-cage airflow.

THE AIM

The aim of the present study was to compare the preference of mice, housed in the forced air and the motor free ventilated caging system, to choose different areas within the cage for resting.

MATERIAL AND METHODS

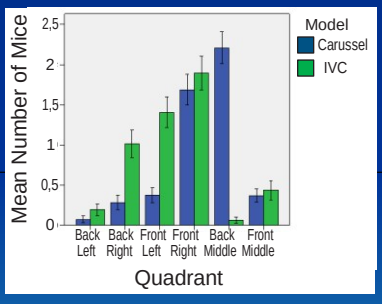
The study was performed in the animal facility of the Center for Experimental Surgery of the Biomedical Research Foundation of the Academy of Athens.

50 C57Bl/6J male mice at the age of 4 weeks were randomly divided into two groups. In group A (n=25) animals were caged in 5, forced air (IVC) individually ventilated cages (Sealsafe™, Tecniplast, Milan, Italy), with approximately 60 air changes per hour (ACH) while in group B (n=25) animals were caged in 5, motor free (CARUSEL) ventilated, cages (OptiMICE®, ACS, USA) with approximately 20 – 25 ACH. All animals were housed in animal rooms under specific pathogen-free conditions at a room temperature of 22 ±1°C, with 55 ± 10% relative humidity, a 12/12- hour light/dark cycle starting at 7:00 a.m. and with a light density of 300 Lux measured 1 m above the floor in the middle of the room. Animal rooms were operated with a positive air of 0.6 Pa. Tap water in drinking bottles and vacuum-packed pelleted food (Teklad diet 2918, Harlan, Italy) were provided *ad libitum*.

After an acclimatization period of 8 days the mice resting areas inside the cage were monitored, three times per day and for a total period of 87 days.

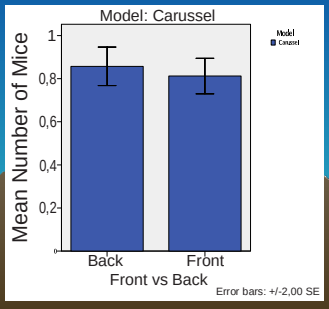
RESULTS

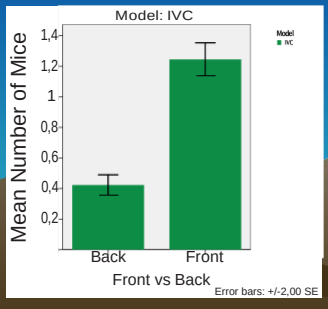
The statistical analysis revealed that in the CARUSEL ventilated cages the animals expressed similar preference to choose the front and the back part of the cage for resting (t=0.737, p=0.461), while in the IVC ventilated cages there was a statistically significant preference (t=12.948, p<0.001) of mice for the front part of the cage.



"IVC"

"CARUSEL"





CONCLUSIONS

Possible explanation for this preference could be related to the differences on the intra-cage airflow, the frequency of air changes per hour and the overall structure of cages between the two systems.