138 CHARACTERIZATION OF LIVER CHANGES IN ZSF1 RATS, AN ANIMAL MODEL OF METABOLIC SYNDROME

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Background: Non-alcoholic fatty liver disease, the hepatic counterpart of the metabolic syndrome (MS), is associated with activation of the innate immunity. ZSF1 rats are a new animal model of MS; however, liver changes in this model have not been described.
Aim: To characterize for the first time liver histological and innate immunity changes in ZSF1 model of MS.
Methods: Male ZSF1 obese rats (Ob, n=21) were randomized to sedentary lifestyle with normal diet (Ob ND no-Ex, n=7) or to either high fat diet from the 10th week of life (Ob HFD, n=7) or low-intensity (15m/min on a treadmill) exercise training, 5/week, from the 15th week onward (Ob Ex, n=7). Healthy Wistar-Kyoto (Ctrl, n=7) and hypertensive ZSF1 lean rats served as controls (Ln, n=7). At the 20th week of life, liver was collected after euthanasia and underwent histomorphological analysis and innate immunity (TLR2, TLR4, PPARγ, TOLLIP) and inflammatory marker (TNFα, IL-1) quantification by Real-Time PCR.
Results: When comparing to Ctrl and Ln, Ob ND no-Ex presented higher degree of steatosis (3.5x, $p<0.05$), which was not attenuated in Ob Ex but increased in Ob HFD (5x vs controls; 1.5x vs ZSF1ob, $p<0.05$). Nor steatohepatitis or fibrosis were observed in any of the groups. Regarding gene expression of innate immunity and inflammatory markers no differences were observed between Ctrl, Ln and Ob ND no-Ex, whereas both Ob HFD and Ob Ex showed increased expression of TLR2, TLR4, PPARγ and TOLLIP. This however did not translate in different expression of TNFα/IL-1.
Conclusion: ZSF1 animal model of MS associates with liver steatosis but not with steatohepatitis or increased expression of innate immunity or inflammation markers.

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