GROWTH AND BONE DENSITY IN FEMALE APOE KNOCK-OUT MICE

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Introduction: Osteoporosis (OP) is a widely spreaded degenerative disease nowadays. Several studies pointed out that apolipoprotein E (ApoE) is correlated to low bone mineral density (BMD) in OP patients. To better understand the role of ApoE in the bone metabolism, we analyzed the growth and BMD of the ApoE knock out (ApoEKO) mice. **Methods:** ApoEKO and their controls (WT) were monthly weighted (BW) and had their tail length (TL) measured as indicative of growth. Both groups were subjected to Dual-Energy X-ray Analysis (DXA) to determine de BMD. The animals were sacrificed at 6 and 12 months-old and the femurs prepared to histochemistry. **Results:** Analysis of the time course of TL growth showed that ApoEKO mice had higher growth ratio than WT (r^2 = 0.99 vs. 0.69, n=6). According to DXAs measurements, ApoEKO also showed lower BMD since the 4th month (7% vs. 22%). At 6 months-old, this difference stabilized at 20% (n=6, $p<0.05$). Bone width analysis showed that ApoEKO developed greater bone thickness (0.16 ±0.02 mm) than WT (0.12 ± 0.02 mm, n=6 $p<0.05$), indicating that ApoEKO have less compact bones. **Discussion and conclusion:** These data show that female ApoEKO mice have low BMD despite their apparently normal endochondral growth suggesting that the loss of this protein affects, somehow, the bone metabolism. **Supported by:** FAPES, FACITEC, DECIT-SUS/MS