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L-carnitine, but not coenzyme Q10, enhances the anti-osteoporotic effect of atorvastatin in ovariectomized rats

Key words: Atorvastatin, Coenzyme Q10, L-carnitine,
Ovariectomized

Research Summary

This study was designed to assess which agent, L-carnitine or Coenzyme Q10, could enhance the anti-osteoporotic effect of atorvastatin while antagonizing myopathy in ovariectomized (OVX) rats.

OVX rats received: 17 β -estradiol, atorvastatin, atorvastatin + L-carnitine, or atorvastatin + Coenzyme Q10. The following parameters were measured:

- Bone mineral density (BMD),**
- Bone mineral content (BMC),**
- Serum levels of bone metabolic markers (BMMs) and creatine kinase (CK)**
- Femur breaking strength and histopathological changes.**

Innovation points

Co-administration of L-Carnitine, but not Coenzyme Q10, enhances the anti-osteoporotic effect of atorvastatin while antagonizing myopathy in ovariectomized rats. This could be valuable in treatment of osteoporotic patients.

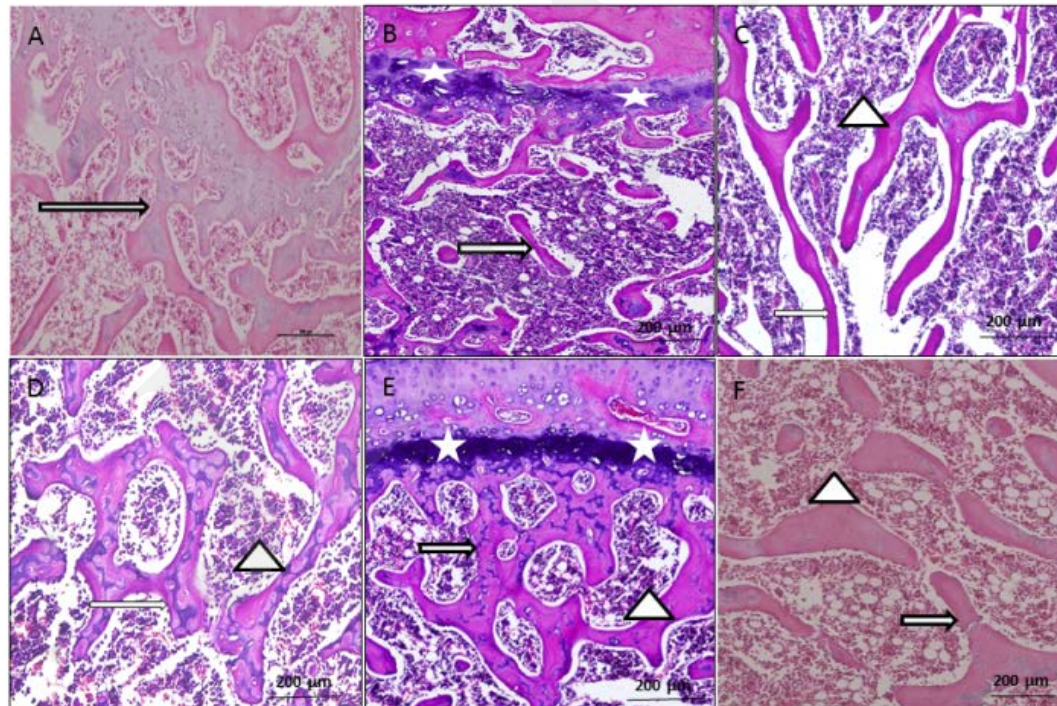


Figure 2

Summary of Results

Table 1 | Effect of treatments (mg/kg/day for eight weeks) on body weight in OVX rats

Fig. 1 | Effects of treatments (mg/kg/day for eight weeks) on (A) BMD, (B) BMC, (C) Femur breaking strength, and (D) Percentage of trabecular bone.

Fig. 2 | The femur in NOVX, OVX, and OVX-treated rats stained with hematoxylin and eosin at $\times 200$ magnification.

Fig. 3 | Effects of treatments (mg/kg/day for eight weeks) on serum levels of (A) BALP, (B) OPG, (C) CTX-1 and (D) CK.