RESULTS:
Probucol significantly prevented the occurrence of ON (with probucol: 38 %, without probucol: 70 %) (Figure 1). The size of the bone marrow fat-cells was significantly smaller in rabbits with probucol medication (51.9 ± 5.1 µm) than those without probucol (60.0 ± 4.0 µm). The rise rate of intraosseous pressure was significantly lower in rabbits with probucol (3.7) than those without probucol (5.7) (Figure 2).
In the 20 rabbits without probucol medication, there were no significant differences between either intraosseous pressure or blood flow rates in the ON+ and ON- rabbits at 0 weeks. At 2 weeks, the pressure was significantly higher in ON+ rabbits (31.9 ± 8.8 mm Hg) than that in ON- rabbits (21.7 ± 10.4 mm Hg). The size of bone marrow fat-cells was significantly larger in ON+ rabbits (61.6 ± 3.5 µm) than that in ON- rabbits (56.3 ± 2.2 µm). Blood flow rates at 2 weeks were no significant differences between ON+ rabbits and ON- rabbits.

DISCUSSION:
This study showed that probucol prevented the occurrence of steroid-induced ON in rabbits by inhibiting the enlargement of bone marrow fat-cells, which may contribute to a rise in intraosseous pressure. In rabbits with probucol medication, both the size of bone marrow fat-cells and intraosseous pressure were no significant differences between ON+ and ON- rabbits. This may indicate that only a lipid-lowering agent itself cannot prevent the occurrence of ON in rabbits completely, indicating that the pathogenesis of steroid-induced ON seems to be multifactorial.

REFERENCE: