

Experimental hypercholesterolaemia in rabbits. Effect on lipid domains in homologous spermatozoa

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The distribution of membrane filipin sterol complexes (FSC) in the plasma membrane of the acrosomal region (PMAR) of rabbit sperm from epididymis and testis, in normal and hypercholesterolaemic rabbits, was examined at ultrastructural level. Membrane FSC were quantitatively analysed on freeze fracture replicas of filipin-treated cells. Cauda epididymal sperm shows a significant increase in filipin sterol complexes concentration in PMAR of hypercholesterolaemic animals compared to normal rabbits. Hypercholesterolaemic animals had 0.53 ± 0.08 FSC μm^{-2} in the marginal segment of PMAR and 0.26 ± 0.03 FSC μm^{-2} for normal animals. In the principal piece we found 0.70 ± 0.07 FSC μm^{-2} for hypercholesterolaemic and 0.43 ± 0.03 FSC μm^{-2} for control animals. We also counted 0.58 ± 0.04 FSC μm^{-2} in the equatorial segment of PMAR for hypercholesterolaemic and 0.38 ± 0.03 FSC μm^{-2} for normal animals respectively. The FSC concentration of testicular sperm, like sperm from corpus and caput of epididym