

Olive oil prevents sperm changes promoted by hipercholesterolemic diets

Fornes Miguel Walter and Saez Tania Estefania

National University of Cuyo & National Research Council (CONICET), Argentina

Semen and sperm cell from hypercholesterolemic rabbits (HCR) exhibit several abnormalities such as teratospermiae, decrease in sperm number, reduced resistance to the hyposmotic shock and spermatid dysfunction accompanying high serum cholesterol levels and increased arterial pressure. HCR acquired these changes due to a fat diet; specifically the balanced diet for rabbit supplemented with commercial grease from cow (approximately, 0.5% cholesterol v/v). The malformed sperm consist in a sperm head folding in the longitudinal axes, permanent cytoplasmic droplet, and/or acrosomal swollen. Functional changes correspond to both reduced protein tyrosine phosphorylation during sperm capacitation and percentage of acrosomal reacted sperm under progesterone stimulation. These changes were reversed by addition of olive oil to the grease diet. We investigated key molecules involved in cholesterol metabolism, and found changes in the expression of mRNA and protein of transcription proteins SREBP 1 y 2 under different diets. Clearly our results show that olive oil added to fat diet reverses the deleterious effect of such types of diet over reproductive parameters and for the first time molecular actions of olive oil on cholesterol metabolism is reported.

Biography

Fornes Miguel Walter has completed his degree (M.D.) and Ph.D. from the School of Medicine at the National University of Cuyo (FCM, UNCuyo). Now is the chairman of the Histology and Embryology Area from the FCM, UNCuyo and Director of basic courses at the Aconcagua University and member of the research carrier at national research council (CONICET). He has published more than 50 papers in reputed journals devoted to the biology of reproduction and serving as an editorial board and reviewer member of prestigious journals.

mforbes@fcm.uncu.edu.ar