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JOURNAL ARTICLE

Effect of egg yolk medium on the acrosome reaction of human spermatozoa

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Preincubation of human spermatozoa in an egg yolk medium (TESTY) at 5 C, followed by washing at 37 C by centrifugation and resuspension in a standard medium (BWW), enhanced the percentage of spermatozoa that underwent the acrosome reaction and increased sperm penetration into zona-free hamster oocytes, as compared with BWW treatment only. The difference in the occurrence of the acrosome reaction between the two treatment protocols was present whether the spermatozoa were incubated for 3 or for 18 h. The increase in acrosome reaction occurred only when spermatozoa were washed after TESTY treatment. Washing at 5 C was not as effective as washing at 37 C. No increased loss of acrosomes was observed when BWW-treated spermatozoa were subjected to the washing procedure. Ionophore A23187 stimulated the acrosome reaction of BWW-treated but not of TESTY-treated spermatozoa, whether or not they were washed before ionophore treatment. In the absence of egg yolk, the medium (TEST) caused only a small enhancement in the acrosome reaction as compared with BWW, but an increase occurred upon addition of ionophore A23187. We conclude that treatment with TESTY enhances the capacitation/acrosome reaction of human spermatozoa and that the removal of egg yolk after incubation, as well as the temperature shock, contribute to this effect.

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