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JOURNAL ARTICLE

Relationship between sperm motility assessed with the Hamilton-Thorn motility analyzer and fertilization rates in vitro

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To determine which sperm movement characteristics are related to in vitro fertilization rates, semen and swim-up preparations used for in vitro fertilization in 108 patients were assessed using the Hamilton-Thorn HTM-2030 Motility Analyzer (HTMA) and other sperm tests. There were highly significant correlations between manual and HTMA results for sperm concentration (Spearman $r = 0.881$; P less than 0.001) and the percentage of motile spermatozoa (Spearman $r = 0.580$; P less than 0.001). The percentage of motile spermatozoa with average path velocities greater than 10 microns/s and greater than 20 microns/s, straight line and curvilinear velocity, linearity (straight line velocity vs curvilinear velocity), amplitude of lateral head displacement, and beat-cross frequency were significantly higher in the insemination medium after selection of motile spermatozoa by the swim-up technique than in the semen. Linearity (P less than 0.01), the percentage of morphologically normal spermatozoa (P less than 0.05) and straight line velocity (P less than 0.05) in semen, and the percentage of motile spermatozoa with average path velocities greater than 10 microns/s in both semen (P less than 0.05) and insemination medium (P less than 0.05) were significantly correlated with in vitro fertilization rate when examined by a nonparametric (Spearman) test. With logistic regression analysis of all data, only the diagnoses of male infertility and tubal disease, linearity in semen, and the percentage of motile spermatozoa with average path velocities between 10 and 20 microns/s in insemination medium were significantly related to in vitro fertilization rates. (ABSTRACT TRUNCATED AT 250 WORDS)

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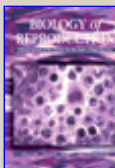


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