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JOURNAL ARTICLE

# Importance of total motile oval count in interpreting the hamster ovum sperm penetration assay

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A prospective study relating computer-assisted semen analysis (CASA) and technician-determined morphology to sperm penetration assay (SPA) outcome in patients with unexplained infertility or male factor was undertaken on 190 males aged 28-45 to determine the value of total motile oval count (TMO), compared to concentration, motility, and morphology considered independently, in predicting the outcome of the SPA. Prewash sperm count ranged 20-1,328 x 10(6), motility 0-93%, morphology 25-78% oval (%OVAL), and SPA scores 0-100%. Multiple regression analysis yielded two statistical models that identified significant predictors for % penetration (%P). Only TMO in one model and %OVAL in an independent effects model showed statistically significant correlation (P < 0.0001) to %P for all subjects. Discriminant function analysis showed the TMO model 85.4% accurate in classifying %P both in the abnormal range (< 20%P) and in the normal range (> or = 20%P). The independent effects model correctly classified 93% in the abnormal group, but projected 72 false negatives in the 101 subjects with %P > or = 20%, correctly classifying only 28.7%. Relative risk analysis showed TMO as a stronger risk factor affecting SPA outcome than %OVAL. It is concluded from this study that below 20%P, both TMO and %OVAL appeared to be comparable as predictive factors. Additionally, the TMO model was equally predictive for SPA > or = 20%P, where the independent effects model showed only 28.7% accuracy. SPA outcome appeared to be more profoundly affected by a decrease in TMO than by a decrease in %OVAL alone.