ABSTRACT

ACCURACY OF SINGLE-BALL LENS MICROSCOPE ON SMARTPHONE IN SCREENING OF SPERM CONCENTRATION AND MOTILITY AT RSUD DR. SOETOMO SURABAYA

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Objective: The aim of this study was to analyze the diagnostic ability of single-ball lens microscope method for assessing the sperm concentration and motility on smartphone.

Method: This study was conducted at Andrology Laboratory Dr. Soetomo Hospital, Surabaya - Indonesia in February 2017. Sample of the study was ejaculate obtained from patients attending Andrology Clinic Dr. Soetomo Hospital. Sixty patients were included in this study. All samples were examined for motility and concentration of spermatozoa with 5th edition WHO's method and single-ball lens microscope.

Result: This study showed a very strong and significant correlation (r = .946; p <.001, 99% CI) between WHO's sperm concentration with the number of spermatozoa in single-ball lens microscope, with a cut-off value ≥ 11, 96.6% sensitivity, 93.5% specificity, 93.3% positive predictive value and 96.7% negative predictive value. While for sperm motility, there was a weak but significant correlation (r = .289; p = .042, 95% CI) between WHO's sperm motility and spermatozoa motility in single-ball lens microscope, with a cut-off value ≥ 63%, 81.8% sensitivity, 60% specificity, 95.7% positive predictive value and 23.1% negative predictive value.

Conclusion : single-ball lens microscope can be used as an initial screening tool for sperm concentration and motility on smartphone by trained medical personnel.

Key words : single-ball lens, smartphone, sperm, concentration, motility