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Usage of computer assisted sperm analysis (CASA) in sperm motility assessment

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Semen analysis is quite important in the evaluation of male fertility. Main parameters of the analysis include determination of sperm concentration, percentage of motile sperm and proportion of normally shaped sperm. CASA interpretation, acrosome reaction test and in vitro fertilization test are recent developments in semen analysis. Motility is the most important single measurement assess to evaluate the functional ability of ejaculated spermatozoa. Aim of the present study was to investigate importance of sperm motility assessment and usage of different counting chambers in CASA. Adult hamsters were used in the study. Regions of the epididymis were selected to investigate motility. However, cauda sperm was used to assess effects of different chambers in motility assessment. Hobson sperm tracker was used to assess sperm motility. Results reveled that Curvilinear velocity of sperm changed 172 ± 4.3 μm/s in proximal corpus to 250 ± 4.2 μm/s in distal cauda. However, straight-line velocity increased from 34 ± 1.2 to 77 ± 2.8 μm/s from proximal corpus to distal cauda. Four different types of slide-cover slip chambers were used with RPMI medium to investigate the best chamber for optimum motility. Data reveled different motility patterns for the same sperm sample using different chamber systems. However, chamber with 22 mm plastic petridish with 22x22 mm coverslip with oil gave the best motility recordings. This fact is important in the assessment of sperm motility as a functional measurement. Our study also showed that optimal set up of CASA as well as a good counting chamber is important in sperm motility studies. Study concludes that CASA is a highly precise tool to assess detailed sperm motility.

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