

ABSTRACT

MODIFIED DENSITY GRADIENT CENTRIFUGATION GIVES A BETTER YIELD OF SPERM THAN CONVENTIONAL DENSITY GRADIENT CENTRIFUGATION METHOD

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Objective: This study aimed to determine whether the modified density gradient centrifugation procedures, the density gradient centrifugation followed by swim-up capable to deliver better results than conventional density gradient centrifugation.

Design: The study was an experimental laboratory and a pre and post test control group design.

Methods: The sample came from sixteen semen patients attending Andrology Unit, Outpatient Clinic Dr. Soetomo and Fertility Clinic of Siloam Hospital Surabaya. A small portion of semen was used for the semen analysis and DNA fragmentation before preparation. One milliliter of semen was processed using modified density gradient centrifugation and another with conventional density gradient centrifugation. The harvest of both methods were analyzed for post-wash concentration, progressive motility percentage (PR), the percentage of normal morphology, DNA fragmentation number of motile sperm recovered (NMSR), and recovery rate (RR).

Results: In modified group, there were lower concentration, number of motile sperm recovered, and the recovery rate and better motility compared with the conventional one, but not statistically significant. The modified group produced higher percentage of sperm with normal morphology and reduction of DNA fragmentation that statistically significant ($p = 0,03$ and $p = 0,008$ respectively).

Conclusion: Modified density gradient centrifugation delivers better percentage of sperm with normal morphology and reduction of DNA fragmentation than the conventional method. The modified DGC method can be used for ART.

Keywords: Sperm preparation, modified density gradient centrifugation, conventional density gradient centrifugation, morphology, DNA fragmentation.