

## ABSTRACT

### THE EFFECT OF GLUTATHIONE SUPPLEMENTATION TO THE SPERM PREPARATION AND CRYOPRESERVATION PROCEDURE TO INCREASE HUMAN SPERMATOZOA MOTILITY AND VIABILITY

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**Objective:** The aim of this study was to prove the effect of glutathione supplementation to the sperm preparation and cryopreservation procedure to increase motility and viability of infertile *oligoasthenoteratozoospermia* human spermatozoa.

**Method:** This study was a laboratory study, quasi experimental design. This research was conducted in the Andrology Clinic Dr. Soetomo Hospital and The Laboratory of In Vitro Fertilization, Biology Departement Faculty of Medicine, Airlangga University, Surabaya in July until Desember 2014. The population were infertile patients who visited Andrology Clinic Dr. Soetomo Surabaya. 10 patients included in this study. Routine semen analysis performed for all ejaculates, then each ejaculate divided into 2 groups for initial treatment: A) mini *Density Gradient Centrifugation* (DGC) glutation +; (B) mini DGC glutation -. Simultaneoustely after initial treatment, the sample divided into 4 groups: (A1) DGC glutation +, Kriopreservasi glutation +; (A2) DGC glutation +, Kriopreservasi Glutation -; (B1) DGC Glutation -, Kriopreservasi Glutation +; (B2) DGC Glutation -, Kriopreservasi Glutation -. Motility and viability analysis done on every stage of treatment. The results were analyzed, compared, and counted statistically to know the significance level.

**Result:** This study shown that in group A & B, average motility were 64,6% & 54,3%; average viability 64,1% & 56%. Average sperm motility and viability of group A higher compared to group B with no significant difference. In group A2 & B2, average motility were 15,25 & 5,75; average viability 6,3% & 0,7. Average sperm motility and viability of group A2 higher compared to group B2 with significant difference ( $p=0,000$ ;  $p=0,001$ ; CI 95% respectively).

**Conclusion:** There was role of glutathione supplementation to the sperm preparation and cryopreservation procedure to increase motility and viability of infertile *oligoasthenoteratozoospermia* human spermatozoa.

**Key words:** Glutathione, sperm preparation, cryopreservation, motility, viability