

ABSTRACT

EFEK SUPLEMENTASI N-ACETYLCYSTEINE *in vitro* TERHADAP KADAR  
MALONDIALDEHYDE SEMINAL PLASMA DAN MOTILITAS SPERMATOZOA PRIA INFERTIL  
PADA PROSES SENTRIFUGASI

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**Objective:** The aim of this study was to prove the effect of N-aceylcysteine (NAC) supplementation in malondialdehyde (MDA) level and sperm motility to the sperm centrifugation process of infertile human spermatozoa.

**Method:** This study was a laboratory study, quasi experimental design. This research was conducted in the Andrology Laboratory Dr. Soetomo Hospital and Pharmacy Laboratory, Faculty of Pharmacy Airlangga University, Surabaya in January until March 2016. The population were infertile patiens wo visited Andrology Clinic Dr. Soetomo Surabaya, 10 patients included in this study. Rutine sperm analysis performed for all ejaculates, then each ejaculate divided into 4 groups : (A1) without centrifugation, NAC - ; (A2) centrifugation NAC - ; (A3) cenrifugation NAC + ; (A4) centrifugation NAC + NaHCO3+. MDA level and motility analysis done on every group. The result were analyzed, compared, and counted statistically to know the significant level.

**Result:** This study shown that in group A1,A2,A3,A4 average MDA level were  $0,0416 \pm 0,018 \mu\text{mol/ml}$ ,  $0,0612 \pm 0,026 \mu\text{mol/ml}$ ,  $0,0453 \pm 0,019 \mu\text{mol/ml}$ ,  $0,0458 \pm 0,019 \mu\text{mol/ml}$ . Average MDA level in group A2 was higher compared to group A3 dan A4 with no significant difference. Average of total motility (A+B+C) in group A1, A2, A3, A4 was :  $70,5 \pm 8,370\%$ ,  $59,7 \pm 7,79\%$ ,  $70,3 \pm 11,066\%$ ,  $72,80 \pm 11,755\%$ . Average of total motility in group A3, and A4 were higher compared to group A1, with significant difference  $p 0,025$  (  $p < 0,05$ , CI 95% ). Average of progressive motility in group A1, A2, A3, A4 were  $32 \pm 6,481\%$ ,  $21,1 \pm 4,533\%$ ,  $39,8 \pm 10,549\%$ ,  $41,3 \pm 10,111\%$ . Average of progressive motility in group A3 and A4 is higher compared to group A2 with significant difference,  $p < 0,0001$  ( $p < 0,05$ , CI 95%).

**Conclusion :** There was role of NAC supplementation to the sperm centrifugation to increase motility of infertile asthenoteratozoospermia.

**Key words :** NAC, sperm centrifugation, MDA, motility