

**Abstract**  
**MODIFICATION OF SPERM PREPARATION AS AN EFFORT TO  
ELIMINATE HUMAN IMMUNO-DEFICIENCY VIRUS-1 (HIV-1)**

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**Background.** The HIV virus is found in semen, mixed with spermatozoa and other cells that are present in ejaculate, even attached to spermatozoa. Sperm preparation and Assisted Reproductive Techniques (ART) is a method to reduce the risk of HIV transmission effectively. In general there are three kinds of sperm preparation techniques, washing, swim-up and density gradient centrifugation. Sperm preparation techniques most often used to eliminate the HIV virus is a combination of density gradient centrifugation (DGC) and the swim-up technique. A study reported the presence of HIV in the evaluation of sperm after preparation of 2.5% -7% left or still found the existence of HIV nucleic acid in the fraction of spermatozoa. Thus this risk have yet to be removed at all, so further research is still needed to obtain a better method in term of safety and effectiveness.

**Objective.** The general objective of this study is to compare between the contents of the HIV-1 virus in sperm qualitatively using Polymerase Chain Reaction (PCR) before and after sperm preparation two steps and three steps.

**Method.** This study is an experimental laboratory research using non randomized pre test and post test group study design. This study was conducted at the Institute of Tropical Disease Airlangga University Surabaya. The samples were male adults aged 21-40 years patients with HIV-1 infection. Number of patients included in this study was 10. Each sample was examined for sperm analysis and PCR, then each sample of semen was treated with sperm preparation of two and three steps. Samples of semen then examined for sperm analysis and PCR. The results were compared. Data analysis using a paired t test.

**Result.** Statistic results showed significant difference between HIV-1 viral content on sperm qualitatively before and after sperm preparation of two steps. There is a significant difference between HIV-1 viral content on sperm qualitatively before and after sperm preparation of three steps. There was no significant difference between HIV-1 viral content on sperm qualitatively after sperm preparation of two steps and three steps.

**Conclusion:** there is a significant difference between HIV-1 viral content on sperm qualitatively before and after sperm preparation of three steps. There was no significant difference between HIV-1 viral content on sperm qualitatively with after sperm preparation of two steps and three steps.

**Keywords:** HIV, washing, density gradient centrifugation, swim-up technique.