

Efek penghambat phosphodiesterase tipe 5 (sildenafil), nitric oxide-donor dan kombinasinya pada mortilitas spermatozoa manusia in vitro =  
The effect of type 5 phosphodiesterase infibitor (sildenafil), nitric oxide-donor, and their combination on human spermatozoa in vitro

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Abstrak

**Objective:** To examine the direct effect of type 5 phosphodiesterase inhibitor (sildenafil), nitric oxide-donor (sodium nitroprusside) and their combination on human spermatozoa in vitro.

**Method:** Semen samples were collected by masturbation after 3 days of abstinence from donors presenting for infertility evaluation at Imunoendocrinology Labolatory. Samples were divided into normospermia and asthenospermia. Each group were washed on discontinuous density gradient (Percoll 45% and 90%) at 300g for 20 minutes, then resuspended in capacitation media containing Ham's F10. Aliquots of  $10 \times 10^6$  spermatozoa were reacted with PDE5 inhibitor, NO-donor, their combination, and also Pentoxifyphylline (non-selective PDE) in different doses (0.1,1 and 10 umol). Minimally 6 samples were test for each dose. After 1 hour incubation at 37°C, 5% CO<sub>2</sub> in air, microscopic analyses were performed to count motility. Analysis of Variance (ANOVA) was used to test difference among the means.

**Result:** There were 27 normospemia samples and 24 asthenospermia samples. In normopsermia group, Sildenafil, NO-donor and their combination increase spermatozoa motility significantly if compare to their blank (p 0.023,0.015,0.006). Sildenafil caused dose-dependent increase in spermatozoa motility. Low dose NO-donor increase motility. Combination of Sildenafil and NO-donor could not increase motility better than Sildenafil or NO-donor alone. Sildenafil or NO-donor increase motility higher than Pentoxifyphylline. In asthenospermia group, Sildenafil, NO-donor, Sildenafil+NO-donor, and Pentoxifyphylline increase motility compare to their blank, but there were no significant difference.

**Conclusion:** Sildenafil, NO-donor and their combination increase spermatozoa motility significantly if compare to their blank. NO-donor could not enhance the effect of Sildenafil to increase motility.