ABSTRACT

OBJECTIVE : Standard semen parameters have proven poor at predicting the outcomes of assisted fertilization. The integrity of sperm DNA is important for the success of fertilization. Single cell gel electrophoresis (Comet Assay) was found simple to detect any damage in any cells, including human spermatozoa. This study attempts to know whether there is any independency between sperm DNA damage and sperm concentration, especially in idiopathic oligozoospermia .

DESIGN :Observational research. Unselected 20 men who had infertility problems were recruited from Infertility Clinic to collect their semen samples.

MATERIALS/METHODS : Semen samples were obtained after 2 to 7 days of sexual abstinence and examined according to World Health Organization guidelines (WHO, 1999). Based on WHO's criteria, sperm concentration below 20 million per ml were grouped into oligozoospermia group, while another above 20 million per ml into normozoospermia group. DNA damage from each samples were measured using single cell gel electrophoresis (Comet Assay). Under alkaline conditions, the spermatozoa were lysed by detergent and salt. The liberated DNA electrophoresed and stained with SYBR green. Under fluorescence microscope with 200 400 x magnification, it would be seen as a comet image. Comets were classified into five categories to determine comet index.

RESULTS : Comparison of study DNA damage between normozoospermia and oligozoospermia using statistical analysis t-test. There is difference between sperm concentration and sperm DNA damage. (probability 0,0293; p< 0,05)

CONCLUSIONS : There is negative correlation between sperm concentration and DNA damage, r=-0,535 (p=0,015 ;p< 0,05). It may be due to abnormality of sperm morphology. Assisted fertilization using low sperm concentration must be considered, as there is possibility any DNA damage.

Key Words : Comet Assay ~ DNA damage ~ sperm concentration