

ASSOCIATION OF FERTILITY POTENTIAL WITH TOTAL GENOME DAMAGE IN SPERMATOZOA

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Introduction and Objectives: Evaluation of sperm DNA damage is crucial in clinical practice as it impacts on reproductive outcomes. Detection of Total genome damage (DNA fragments) is based on a method introduced by Aljanabi and Martinez 1997. Our objective was to examine sperm total genome damage in proven fertile & infertile men.

Methods: Routine semen analysis was done for proven fertile men (n = 7) and infertile men (n = 13). Briefly, sperm pellets (3 X 10⁴ cells) were treated for salting out DNA extraction & purification. Gel electrophoresis was performed for 2 hours at 50 volt. Gel photos were analyzed by Gel Pro Analyzer software version 3.1 Media Cybernetics, USA.

Results: Significant differences were seen in the maximum optical density (max OD) between fertile and infertile group in terms of the intact and damaged DNA (≤500bp) (P = 0.004 and 0.025 respectively). Max OD of the damaged DNA (500-1000bp) was comparable between the two groups.

Conclusion: Total Genome damage test can differentiate between fertile and infertile men. Infertile men show higher incidence of short DNA fragments in their semen.

Groups	Intact DNA	Damaged DNA	
		(500-100bp)	(≤500)
Proven Fertile (n = 7)	148.03±14.93	6.4±6.2	4.8±4.8
Infertile patients (n = 13)	75.07±14.29	18.2±9.9	105.69±29.8
P value	0.004	0.4	0.025

Results expressed as mean ± SEM, P <0.05 was considered significant using Mann Whitney test.