ISO 9001 : 2008 CERTIFIED LAB

KOS Diagnostic Lab
(A Unit of KOS Healthcare)

KOS™
EXCELLENCE IN HEALTHCARE & DIAGNOSTICS

Dr. Vinay Chopra
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Chairman & Consultant Pathologist

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LABORATORY REPORT

Name	:Mr YOGENDER	Sex/Age	: Male/32 Years	Case ID	:40521600864
Ref By	:DR VINY CHOPRA	Dis.Loc.	:	Pt ID	:
Bill. Loc.	:KOS DIAGNOSTIC LAB			Pt. Loc.	:
Registration Date & Time	: 06-May-2024 08:33	Sample Type	: Seminal Fluid	Ph #	:
Sample Date & Time	: 06-May-2024 08:34	Sample Coll.By	:	Ref Id	:
Report Date & Time	: 13-May-2024 12:12	Acc. Remarks	:	Ref Id 2	:

SPERM CHROMATIN DISPERSION TEST REPORT

Principle of the Method:

This technique is based on the sperm chromatin dispersion (SCD) technique (Cissen et al., 2016; K. Oleszczuk et al., 2016). Intact unfixed spermatozoa are immersed in inert agarosemicrogel on a pre-treated slide. An initial acid treatment denatures the DNA in those spermatozoa with fragmented DNA. Following this, the lysis solution removes most of the nuclear proteins and when DNA breakage is not there, nucleoid with large halos of spreading DNA loops are produced emerging from a central core. In spermatozoa where DNA is fragmented, such a halo is either absent or is minimal.

Observations:

Sample Types	Total No. of Sperm Cells Count	No. Of Sperm Cells Showing halo (Without DNA Fragmentation)	No. Of Sperm Cells Not Showing halo (Showing DNA Fragmentation)	Sperm DNA Fragmentation (%)
Control	300	294	6	2
Patients	300	255	45	15

Result: DNA Fragmentation is observed in 15% of the sperm cells analyzed.

Inference:

- Couples with no known infertility problems were 7.0 times more likely to achieve a pregnancy/delivery, if the DNA fragmentation index (DFI) was <30% using in-vivo fertilization.
- Infertile couples using IUI were 7.3 times more likely to achieve a pregnancy/delivery if their DFI was <30%.
- With routine IVF, infertile couples were approximately 2.0 times more likely to become pregnant if their DFI was <30%. (K. Oleszczuk et al., 2016)

For specimens received from non NCGM locations, it is presumed that it belongsto the patient as identified on the labels of the container/Test Requisition Formand it has been verified as per GCLP (Good Clinical Lab Practices) by the referrer atthe time of collection of the specimen. NCGM's responsibility is limited to theanalytical part of the assay performed.

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Ph.D,EU Dip in
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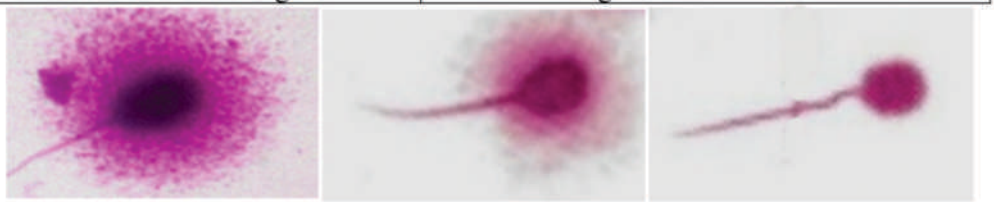
Types of Sperm Observed In This Technique after Treatment

1. Sperm cells with big halo	Without DNA fragmentation
2. Sperm cells with medium halo	Without DNA fragmentation
3. Sperm cells without halo/Degrade	With DNA fragmentation



1. Big halo 2. Medium halo 3. Degraded

Advantages of Sperm DNA Fragmentation (SDF) Assay

- To distinguish which couples are suitable for treatment by IUI. High SDF values have been shown to reduce the efficacy of intra-uterine insemination (IUI) from 16% to 4% (Mona Bungum et al., 2011) or lower (Duran et al., 2002).
- To assess the quality of semen samples or donors for suitability.
- To assess the efficacy of medical interventions or treatment of infectious diseases. The percentage of spermatozoa with fragmented DNA is significantly higher in patients with *Chlamydia trachomatis* and *Mycoplasma* infections. Antibiotic therapy in these patients was demonstrated to significantly reduce SDF levels (Gallegos et al., 2008).
- To provide answers to cases of unexplained infertility, ART failure or repeated abortions. High SDF levels have been shown to influence fertilization rate and embryo quality, leading to repeated pregnancy loss and low ART outcome (Frank et al., 2016; Cissen et al., 2016; Simon et al., 2017).

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