The AMH and Inhibin B in serum and follicular fluid was a very good predictive marker for assessment of oocyte quantity but did not correlate with the maturity of the oocyte or fertilization or reproductive outcome.

**Summary and Conclusion**
The average mean value of FSH in day 2 serum (11.45± 19.73 mIU/ml) in infertile women was compared with FSH value of control (5.99±2.37 mIU/ml). It was noted that there was an increase in FSH level in infertile group which was statistically significant at 5% level.

The average mean value of LH in day 2 serum (7.30± 9.77 mIU/ml) in infertile women was compared with LH value of control (6.30 ± 5.09 mIU/ml). It was noted that there was a slight increase in LH level in infertile group which was statistically insignificant.

The average mean value of PRL in serum (18.17 ± 14.81 ng/ml) in infertile women was compared with PRL value of control (14.49 ± 9.14 ng/ml). It was noted that there was a slight increase in PRL level in infertile group which was statistically insignificant.

The average mean value of FSH in serum (12.90±14.22ng/ml) in infertile women was compared with FSH value of control (2.41± 7.36 mIU/ml). It was noted that there was an increase in P4 level in infertile group which was statistically significant at 1% level.

The average mean value of E2 in serum (107.9 ± 139.1 pg/ml) in infertile women was compared with E2 value of control (47.18± 9.14 ng /ml). It was noted that there was an increase in E2 level in infertile group which was statistically significant at 5% level.

The average mean value of FSH in serum (6.92 ± 1.91mIU/ml) in infertile women was compared with FSH value of control (9.81 ± 4.91 mIU/ml). It was noted that there was an decrease in FSH level in infertile group which was statistically significant at 5% level.
Similarly average mean value of LH in serum (0.45±0.31mIU/ml) in infertile women was compared with LH value of control (0.40 ± 0.23mIU/ml). It was noted that there was a slight decrease in LH level in infertile group which was statistically insignificant.

The average mean value of E2 in serum (1782.66±967.95 pg/ml) in infertile women was compared with E2 value of control (1950.97± 846.03 pg/ml). It was noted that there was a slight decrease in E2 level in infertile group which was statistically insignificant.

Similarly average mean value of P4 in serum (18.54±16.09 ng/ml) in infertile women was compared with P4 value of control (10.80± 6.16 ng/ml). It was noted that there was an increase in P4 level in infertile group which was statistically significant at 1% level.

The average mean value of AMH in serum (3.66 ±5.98 ng/ml) in infertile women was compared with AMH value of control (3.04± 1.68 mIU/ml). It was noted that there was no significant alteration in AMH level.

Similarly average mean value of INHIBIN B in serum (33.50±9.11pg/ml) in infertile women was compared with INHIBIN B value of control (63.69 ± 18.87 pg/ml). It was noted that there was a decrease in INHIBIN B level in infertile group which was statistically significant at 1% level.

The average mean value of FSH in follicular fluid (9.02 ± 0.62 mIU/ml) in infertile women was compared with FSH value of control 11.03 ± 1.10 mIU/ml). It was noted that there was a decrease in FSH level in infertile women which was statistically significant at 5% level.

Similarly average mean value of LH in follicular fluid (1.14±2.48 mIU/ml) in infertile women was compared with LH value of control (2.54 ± 3.37 mIU/ml). It was noted that there was a slight decrease in LH level in infertile group which was statistically insignificant.

Similarly average mean value of LH in follicular fluid (1.14±2.48 mIU/ml) in infertile women was compared with LH value of control (2.54 ± 3.37 mIU/ml). It was noted that there was a slight decrease in LH level in infertile group which was statistically insignificant.
mIU/ml). It was noted that there was a decrease in LH level in infertile women which was statistically significant at 5% level.

The average mean value of E2 in follicular fluid (3330.67±347.13 pg/ml) in infertile women was compared with E2 value of control (3523.4±316.12 pg/ml). It was noted that there was a slight decrease in E2 level in infertile women which was statistically insignificant.

Similarly average mean value of P4 in follicular fluid (91.6 ± 2.7 ng/ml) in infertile women was compared with P4 value of control (92.34 ± 2.65 ng/ml). It was noted that there was a slight decrease in P4 level in infertile women which was statistically insignificant.

The average mean value of AMH in follicular fluid (8.97± 6.25 ng/ml) in infertile women was compared with AMH value of control (6.71 ±5.01 ng/ml). It was noted that there was a slight increase in AMH values in infertile group which was statistically insignificant.

Similarly average mean value of INHIBIN B in serum (3825.43 ± 198.08pg/ml) in infertile women was compared with INHIBIN B value of control (4120.89 ± 280.94pg/ml). It was noted that there was a decrease in INHIBIN B level in infertile group which was statistically significant at 1% level.

There was a positive correlation between the serum AMH levels and no. of eggs in the control and infertile group were r = 0.3673 (t=1.667) and r = 0.2607 (t=1.723) which was statistically significant (t<0.05).
There was no correlation between the serum AMH levels and no. of mature eggs in control group where \( r = 0.0005 \) (\( t=0.0032 \)) and \( r = 0.0017 \) (\( t=0.0108 \)) in infertile group which was statistically not significant (\( t<0.05 \)).

There was a positive correlation between the serum INHIBIN B levels and no. of eggs in the control and infertile group were \( r = 0.4027 \) (\( t=1.866 \)) and \( r = 0.2897 \) (\( t = 1.938 \)) which was statistically significant (\( t<0.05 \)).

There was no correlation between the serum INHIBIN B levels and no. of mature eggs in control group where \( r = 0.0173 \) (\( t =0.110 \)) which was statistically insignificant (\( t<0.05 \))

There was no correlation between the serum INHIBIN B levels and no. of mature eggs in infertile group were \( r = 0.0056 \) (\( t =0.0358 \)) which was statistically insignificant (\( t<0.05 \)).

There was a positive correlation between the follicular fluid AMH levels and no. of eggs in the control group were \( r = 0.3780 \) (\( t = 1.713 \)) which was statistically significant (\( t<0.05 \)).

There was a positive correlation between the follicular fluid AMH levels and no. of eggs in the infertile group were \( r = 0.2867 \) (\( t = 1.916 \)) which was statistically significant (\( t<0.05 \)).

There was no correlation between the follicular fluid AMH levels and no. of mature eggs in control and infertile group where \( r = 0. \) and \( r = 0 \) respectively which was statistically not insignificant.
There was positive correlation between the follicular fluid Inhibin B levels and no. of eggs in the control group were $r = 0.4296$ (t=2.018) which was statistically significant (t<0.05).

There was positive correlation between the follicular fluid INHIBIN B levels and no. of eggs in the infertile group were $r = 0.4564$ (t = 3.21) which was statistically significant (t<0.01).

There was no correlation between the follicular fluid INHIBIN B levels and no. of mature eggs in control group where $r = 0.0395$ (t = 0.167) which was statistically not significant.

There was no correlation between the follicular fluid INHIBIN B levels and no. of mature eggs in infertile group were $r = -0.0037$ (t = 0.0156) which was statistically not significant.

When the average mean sperm count of normozoospermia (86±15.53) was compared with teratozoospermia(71.67±12.92), it was observed that the sperm count decreased in teratozoospermia and was statistically significant at 1% level.

When the average mean sperm count of normozoospermia(86±15.53) was compared with asthenoteratozoospermia(69.17±10.82), it was observed that the sperm count decreased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm count of normozoospermia (86±15.53) was compared with oligoasthenoteratozoospermia (11.19±7.08), it was observed that the sperm count decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.
When the average mean sperm count of teratozoospermia (71.67±12.92) was compared with asthenoteratozoospermia (69.17±10.82), it was observed that the sperm count decreased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm count of teratozoospermia (71.67±12.92) was compared with oligoasthenoteratozoospermia (11.19±7.08), it was observed that the sperm count decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm count of asthenoteratozoospermia (69.17±10.82) was compared with oligoasthenoteratozoospermia (11.19±7.08), it was observed that the sperm count decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm motility of normozoospermia (73.25±5.57) was compared with teratozoospermia (64.07±7.20), it was observed that the sperm motility was decreased in teratozoospermia and was statistically significant at 1% level.

When the average mean sperm motility of normozoospermia (73.25±5.57) was compared with asthenoteratozoospermia (40.50±4.23), it was observed that the sperm motility was decreased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm motility of normozoospermia (73.25±5.57) was compared with oligoasthenoteratozoospermia (35.00±9.84), it was observed that the sperm motility was decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.
When the average mean sperm motility of teratozoospermia (64.07± 7.20) was compared with asthenoteratozoospermia(40.50±4.23), it was observed that the sperm motility was decreased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm motility of teratozoospermia (64.07± 7.20) was compared with oligoasthenoteratozoospermia (35.00±9.84), it was observed that the sperm motility was decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm motility of asthenoteratozoospermia (40.50±4.23) was compared with oligoasthenoteratozoospermia (35.00±9.84), it was observed that the sperm motility was decreased in oligoasthenoteratozoospermia and was statistically significant at 5% level.

When the average mean sperm normal morphology of normozoospermia (29.95± 3.30) was compared with teratozoospermia (27.00±17.59), it was observed that the sperm normal morphology was decreased in teratozoospermia and was statistically insignificant.

When the average mean sperm normal morphology of normozoospermia (29.95±3.30) was compared with asthenoteratozoospermia (17.72±3.23), it was observed that the sperm normal morphology was decreased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm morphology of normozoospermia (29.95±3.30) was compared with oligoasthenoteratozoospermia (10.78±2.77), it was observed that the sperm normal morphology was decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.
When the average mean sperm morphology of teratozoospermia (27.00±17.59) was compared with asthenoteratozoospermia (17.72±3.23), it was observed that the sperm normal morphology was decreased in asthenoteratozoospermia and was statistically significant at 5% level.

When the average mean sperm morphology of teratozoospermia (27.00±17.59) was compared with oligoasthenoteratozoospermia (10.78±2.77), it was observed that the sperm normal morphology was decreased in oligoasthenoteratozoospermia and was statistically significant at 1% level.

The average mean value of processed semen sample (7.59±4.15%) was compared with raw semen sample (10.74±2.52) in control groups it was found that there was an decrease in DFI in processed semen sample which was statistically significant at 1% level.

The average mean value of processed semen sample (11.44±4.16%) was compared with raw semen sample (17.00±5.09) in teratozoospermia it was found that there was an decrease in DFI in processed semen sample which was statistically significant at 1% level.

The average mean value of processed semen sample (11.22±6.62%) was compared with raw semen sample (15.44±7.48) in asthenoteratozoospermia and it was found that there was an decrease in DFI in processed semen sample which was statistically significant at 5% level.
The average mean value of processed semen sample (18.44 ± 3.35%) was compared with raw semen sample (22.78 ± 2.77%) in oligoasthenoteratozoospermia and it was found that there was a decrease in DFI in processed semen sample which was statistically significant at 1% level.

When the average mean sperm DFI of normozoospermia (7.59 ± 4.15%) was compared with teratozoospermia (11.44 ± 4.16%), it was observed that the sperm DFI was increased in teratozoospermia and was statistically significant at 1% level.

When the average mean sperm DFI of normozoospermia (67.59 ± 4.15%) was compared with asthenoteratozoospermia (11.22 ± 6.22%), it was observed that the sperm DFI was increased in asthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm DFI of normozoospermia (7.59 ± 4.15%) was compared with oligoasthenoteratozoospermia (18.44 ± 3.35%), it was observed that the sperm DFI was increased in oligoasthenoteratozoospermia and was statistically significant at 1% level.

When the average mean sperm DFI of teratozoospermia (11.44 ± 4.16%) was compared with asthenoteratozoospermia (11.22 ± 6.22%), it was observed that the sperm DFI was statistically insignificant between the two groups.

When the average mean sperm DFI of teratozoospermia (11.44 ± 4.16%) was compared with oligoasthenoteratozoospermia (18.44 ± 3.35%), it was
observed that the sperm DFI was increased in oligoasthenoteroatozoospermia and was statistically significant at 1% level.

When the average mean sperm DFI of asthenoteroatozoospermia (11.22 ± 6.22%) was compared with oligoasthenoteroatozoospermia (18.44 ± 3.35), it was observed that the sperm DFI was increased in oligoasthenoteroatozoospermia and was statistically significant at 1% level.

The fertilization did not seem to be influenced by sperm fragmentation were the \( r = -0.0776 \) (\( t = 0.330 \)) for control groups \( r = 0.052 \) (\( t = 0.220 \)) for teratozoospermia and \( r = 0.004 \) (\( t = 0.0256 \)) for asthenoteroatozoospermia which was statistically not significant.

The fertilization rate was negatively correlated with sperm DFI in oligoasthenoteroatozoospermia were \( r = -0.536 \) (\( t = 1.672 \)) which is statistically significant.

The cleavage rate did not seen to be influenced by sperm DNA fragmentation \( r = 0.0225 \) (\( t = 0.144 \)) (not significant) in control groups \( r = 0.050 \) (\( t = 0.050 \)) (not significant) in teratozoospermia and \( r = 0 \) not significant in asthenoteroatozoospermia.

The cleavage rate was negatively correlated with sperm DFI in oligoasthenoteroatozoospermia were \( r = -0.584 \) (\( t = 2.018 \)) which is statistically significant (\( t < 0.05 \)).

AMH was not significant with the control and infertile group as all the patients were < 37 years. It served as a marker for ovarian response and correlated with no.of oocytes but not with the quality of the oocyte. Inhibin B was found to be to be increased in control group which correlated to no. of
Assessment of Oocyte Quality with AMH, Inhibin B, in Serum and Follicular Fluid and Predicting Pregnancy outcome with Sperm DNA Fragmentation Index had a negative correlation with the fertilization and cleavage rate in oligoasthenozoospermia cases and fertilization rate in other groups.

Our study indicates that the proportion of sperm with DFI influences fertilization rate for a threshold value above 10% and good quality embryos was derived when the DFI was < 10%. No pregnancy was obtained if > 20% of selected sperm were AO positive, this factor may have a good predictive value in cases of successive failures of implantation for apparently good quality embryos. When DNA fragmentation Index was higher than 10%, the embryo development was lower than 70% whereas this could reach >80%, when DFI was <10%. The pregnancy was achieved when the DFI was < 15% for all the patients. The two missed abortion patients had DFI more than > 15%. So DFI could serve as a predictor of IVF outcome. So the acridine orange method used to identify sperm DNA damage is cheap and easy method. The Sperm DNA damage test has to be included as an additional parameter with the routine semen analysis.

Out of 63 patients 31 patients became pregnant which was 49.2% pregnancy rate which is a good success rate. Out of 31 patients 6 patients had missed abortions out of which 2 patients were severe oligoasthenoteratozoospermia cases. The 26 patients are till date ongoing pregnancies.

In conclusion of the present study, the hormonal markers of serum and follicular fluid like FSH, LH, E2, P4 were good predictors for patients undergoing ART cycles. The AMH and Inhibin B in serum were very good predictive markers for assessment of oocyte quantity but did not correlate with
the maturity of the oocytes or fertilization or reproductive outcome in the positive patients.

DNA integrity is a more objective marker of sperm function. It is therefore conceivable that DNA integrity assessment studies have a pivotal diagnostic and prognostic role in infertile men opting for assisted reproductive techniques (ART). Further studies are needed to determine AMH and INHIBIN value to predict clinical pregnancy in IVF outcome. The relationship of AMH and INHIBIN B and the quality of oocytes have to be confirmed with larger population to get better outcome of ART.

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