

Table 12. Summary of statistical associations between miR-99a and miR-143 expression and reproductive parameters.

Parameter Category	Variable/ Comparison	Statistical Test	Result	p-value	Significance
Sex difference	miR-99a (Male vs Female)	Mann–Whitney U	Higher in males (6.64 vs 2.37)	<0.001	Significant
	miR-143 (Male vs Female)	Mann–Whitney U	Higher in males (4.57 vs 3.43)	0.004	Significant
Semen Parameters	miR-99a vs motility	Spearman	r = -0,146	0,395	NS
	miR-99a vs total sperm count	Spearman	r = 0,166	0,334	NS
	miR-143 vs semen parameters	Spearman	No correlation	>0.05	NS
Motility groups	≤42% vs >42%	Mann–Whitney U	Higher miRNA levels in low motility	0.203/0.214	NS
Sperm count groups	≤39M vs >39M	Mann–Whitney U	Slightly higher miRNA levels in higher counts	0.222/0.168	NS
Female parameters	miR-99a & miR-143 vs AMH/miR-143 vs	Spearman	Positive correlation	0.006/0.033/0.018	Significant
	FSH/ miR-143 vs		No correlation	>0.05	NS
	retrieved oocytes miRNAs vs age, BMI, LH, E2, PRL, infertility duration				
Embryo quality	miR-99a across groups	Kruskal–Wallis	No difference	0.436	NS
	miR-143 across groups	Kruskal–Wallis	Significant difference	0.046	Significant
	miR-143 (Excellent vs Poor)	Bonferroni post hoc	Higher in excellent embryos	0.042	Significant