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Oral Presentations

O-47

Correlation between long non-coding RNA *MALAT1* and *HOTAIR* expression with sperm parameters and MDA level in infertile men

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Background: Infertility is a common complete disorder, which can be caused by oxidative stress. Accumulating evidence suggest that long non-coding RNA (lncRNA) metastasis-associated lung adenocarcinoma transcript 1 (*MALAT1*) and HOX transcript antisense RNA (*HOTAIR*) is involved in the regulation of the oxidative stress responses.

Objective: We aimed to investigate the possible expression status of *MALAT1* and *HOTAIR* in the sperm and its correlation between sperm parameters and malondialdehyde (MDA) levels.

Materials and Methods: Specimens were obtained

randomly from 25 fertile men and 25 infertile men, aged between 25-55 yr old. Sperm parameters were evaluated by computer-aided sperm analysis. Sperm chromatin quality were assessed by acridine orange staining method. Seminal MDA levels were determined by thiobarbituric acid reaction method. The expression of *MALAT1* and *HOTAIR* was detected by RT-PCR.

Results: A decreased level of *MALAT1* and *HOTAIR* expression was observed to be associated with the infertile patients ($p < 0.001$). The relative expression level of *MALAT1* and *HOTAIR* were positively correlated with motility and morphology ($p < 0.001$). Meanwhile we found the expression levels of genes were negatively correlated with sperm chromatin damage and MDA levels ($p < 0.001$).

Conclusion: The decreased expression of *MALAT1* and *HOTAIR* resulted in high level of MDA, DNA denaturation and abnormal semen parameters. These findings exhibited the important implications of lncRNAs serving as a potential therapeutic indicator to assess male infertility in assisted reproductive procedures.

Key words: LncRNA, *MALAT1*, *HOTAIR*, Sperm, Infertile.