Famotidine sperm treatment: A new approach for more success in ART

Objective: We investigated whether treatment of sperm from Asthenospermia patients with Famotidine could diminish sperm premature chromosome condensation (PCC). The frequency of sperm PCC formation in sperm of normal and Asthenospermia men with/without Famotidine treatment were compared and analyzed.

Methods: Hamster oocytes were retrieved after super ovulation by PMSG and HCG injection. After treatment with hyaluronidase, zona was removed by trypsin digestion. Sperm treated with Famotidine (10?g/ml) and processed by swim up method. After capacitation, zona free oocytes were incubated with sperm in fresh media containing colcemid. Cells were fixed and stained in 5% Giemsa. Oocytes were analyzed.

Results: The rate of intact sperm head and PCC was lower and sperm penetration rate was higher in Famotidine treated samples compared to non-treated groups. Sperm penetration rate was significantly higher in treated asthenosperm samples compared to non-treated ones (P<0.001). Moreover, there was a significantly lower rate of intact sperm head in treated asthenosperm samples compared to non-treated ones (P<0.001). Finally, a significantly lower rate of PCC in treated asthenosperm samples comparing to non-treated ones was seen (58.1% and 72.96% respectively) (P<0.001).

Conclusions: Sperm PCC formation could be one of the main causes of failed fertilization in individuals with sperm abnormalities. Also sperm PCC formation may be involved in the etiology of some cases of idiopathic infertility. Since the susceptibility of sperm to oxidative stress is significantly greater in idiopathic infertile men, our results demonstrate that treatment with Famotidine could significantly reduce these stress factors and increase IVF outcome.

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