The Effects of SSRIs on Male Fertility

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ABSTRACT

Study: Galal et al. (2016) Experimental
Study type: Rats
Population: 60 male adults
SSRI type: Fluoxetine
Purpose: Investigate adverse effects of long-term administration of fluoxetine on fertility
Findings: Both doses for 8 weeks resulted in:
- Significant (p<0.05) reduction in percentage of sperm motility, % sperm count, serum levels of FSH, LH, testosterone and estrogen
- Increased apoptosis and % sperm abnormalities compared to control group
Association: Rats

RESULTS

Montaír et al. (2013) Experimental
-Rats: 35 male adults
-gestation day 13 to lactation day 21
Fluoxetine
-65mg/kg, 10mg/kg, 20mg/kg, control group
-Analyse safe doses during prenatal period and lactation as well as extent of damage that fluoxetine brings to the testis of the male rat offspring in adulthood
-Those exposed to 20mg/kg showed a decrease in testicular weight, daily sperm production and semiferous tubule length, reduced by 11%, 18% and 17%, respectively
-The volume of Leydig cells were reduced by 29% and 30% respectively in rats exposed to 5mg/kg and 20mg/kg respectively
-SSRIs are generally well tolerated by males

Lyons et al. (2016) Experimental
-Rats: 87 male adults
-Fluoxetine, sertraline (Zoloft)
-Identify the mechanism in which SSRIs elevates serum prolactin
-SSRIs in this study can inhibit hypothalamic dopamine neurones that would normally suppress secretion of prolactin
-Inhibit due to an increase of serotonin activity
-SSRI use (excess prolactin) is a common cause of infertility in males

Tantiwai et al. (2018) Prospective Cohort
-Human: 35 males aged 18-65yrs
-Paroxetine
-10mg, 20mg, 30mg & 40mg
-evaluate the effects of the SSRI Paroxetine on semen parameters

Eliazer et al. (2014) Case Report
-Human: 1 Caucasian male
-3 years SSRI Misused depressive and anxiety disorder
-Citalopram 40mg
-Review the effects antidepressants by review of the case report and literature

Safranin et al. (2008) RCT
-Human: 74 men aged 20-50 years
-Orally depressed for over 6 months
-Escitalopram, Citalopram, Fluoxetine, Paroxetine, Sertraline
-Testosterone and estrogen levels in males
-SSRIs can impair semen quality and damage sperm parameters

DISCUSSION

The results of these studies suggest that SSRI use leads to significant changes on male fertility in both men and rats. All semen parameters, increased DNA fragmentation, increased oxidative stress, decreased testicular weight were all observed. In multiple studies, once the population stopped being administered SSRIs, all negative alterations on male fertility were reversed after an 8 week recovery period. Conclusion: Male fertility is not affected by exposure to SSRIs.

CONCLUSION

It is estimated that by 2030, depression will be the second leading cause of world disability with predictions that by 2020 it will be the largest contributor to disease burden. While treatments for depression can vary, selective serotonin reuptake inhibitors (SSRIs) are currently the most prescribed antidepressants. Despite an increase of studies documenting the effects of antidepressants, there exists a limited number of studies on male SSRI use and the resulting effects on their fertility. Despite the significant use of SSRIs, research is needed to advance the validation of this conclusion. Further study, including long term and large scale research, is needed to advance the validation of this conclusion. Men taking Paroxetine, Changes in the DNA integrity may adversely affect fertility potential.

REFERENCES


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