

The reduced content of estrogen and progesterone receptors in varicocele sperm may be indicative of the clinical surgery in the testicular varicocele

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The enigma of testicular varicocele has always attracted the researcher's attention as attested by the consistent literature, although conflicting data are reported (1). The detrimental role of varicocele in fertility is supported by the presence of an higher frequency of affected men in the infertile population (2). Varicocele influences male fertility in a variety of ways: spermatogenesis, semen quality and gamete biology. However, the mechanism/s by which the pathology impairs sperm production and activity, are not known yet. In spite of active interest, our knowledge about sperm molecular anatomy is very limited. Instead, it is important to fully elucidate the molecular sperm architecture, in order to clarify clinical cases of idiopathic infertility since not all the apparently normal sperm are able to fertilize. The presence of steroid/steroid receptor systems was demonstrated in human sperm, suggesting that both systemic and local steroids through sperm receptors, may influence male fertility. From our data, it emerged that varicocele causes a damage in the gamete at molecular level which includes a significant reduction of estrogen and progesterone receptors, opening a new chapter in the already multifaceted physiopathology of the disease. By the time of ovulation, estradiol and progesterone are almost everywhere in the egg microenvironment affecting ability of sperm to fertilize the oocyte. Therefore, the reduced responsiveness to these hormones as we observed in varicocele sperm, impedes their goal. Altogether, these studies constrain the need of further researches on the molecular anatomy of human male gamete both in healthy and in pathological conditions related the male genital apparatus, considering the high couple infertility linked to the male. The translation of these new researches in the clinic surgery of testicular varicocele needs to be taken into account since the reduction of steroid receptors in sperm implies a decline in the acquisition of fertilizing ability.

References

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Keywords

Testicular varicocele; steroid receptors; human sperm.