

## عنوان مقاله:

The ratio of Protamine 1 to Protamine 2 gene expression in sperm chromatin of varicoceles

## محل انتشار:

هشتمین کنگره بین المللی و جشنواره دانشجویی طب تولید مثل و سومین کنگره بین المللی ژنتیک تولید مثل (سال: 1398)

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## خلاصه مقاله:

Background: Varicocele or disturbance of testicular blood circulation is considered of one of the main cause of male infertility with decrease of sperm fertility potential. Although, there are many studies on the effects of varicocele on sperm parameters and some functional capabilities of these cells, but there are few data on sperm chromatin molecular changes in these patients. Objective: The aim of present study is the evaluation of sperm chromatin/DNA integrity and the changes of protamine (1 & 2) genes expression in varicoceles. Materials and Methods: 25 sperm samples as patient group and 25 sperm samples as control group were evaluated at first for sperm parameters according to WHO criteria. For sperm chromatin and DNA integrity, the CMA3 staining and TUNEL assay were done respectively. To examine the sperm protamine (1 & 2) expression, after RNA extraction and preparing of cDNA, the levels of protamines mRNAs were determined by RT-PCR method. Results: The results showed that the sperm parameters significantly decreased in varicocele patients when compared to controls. In sperm chromatin condensation, the percentage of spermatozoa with protamine deficiency was greater than control ones. In the results of TUNEL assay, the rate of apoptotic spermatozoa showed significantly increase in comparison with control fertile men. In molecular evaluations, we showed that the level of protamine 1 expression decreased in patients group, but the level of protamine 2 expression didn't show any significant difference with control group. It should be noted that the ratio of protamine was changed to about 1/2 of the ratio in control group. Conclusion: Our results showed that in the case of varicocele, not only we have a reduction in sperm parameters, the rates of sperm chromatin condensation will decrease and sperm apoptosis will increase. On the other hand, the level of sperm protamine expression changes .and so we can use this, as a good marker of male infertility due to the varicocele

## کلمات کلیدی:

Varicocele, Sperm, Chromatin, Protamine expression

## لینک ثابت مقاله در پایگاه سیویلیکا:

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