

عنوان مقاله:

Effect of vitamin D on apoptotic marker, reactive oxygen species and human sperm parameters during the process of cryopreservation

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 22، شماره 9 (سال: 1398)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Mahin Taheri Moghadam - *Cellular and Molecular Research center, Ahvaz Jundishapur University of Medical Sciences*

Yousef Asadi Fard - *Student Research Committee, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

Ghasem saki - *Cellular and Molecular Research center, Ahvaz Jundishapur University of Medical Sciences*

Roshan Nikbakht - *Fertility, Infertility and Perinatology center, Imam Khomeini Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran*

خلاصه مقاله:

Objective(s): Sperm cryopreservation plays an undeniable role in assisted reproductive technology. However, this process significantly reduces the motility, viability, morphology and nuclear integrity of sperm. Reasons of these changes were oxidative stress and apoptosis. The aim of this study was to evaluate the influence of vitamin D on the survival and integrity of fertile sperm after cryopreservation. **Materials and Methods:** Semen sample of 18 males with normal parameters was used. After swimming up, each sample was divided into two parts. 20 μ mol vitamin D was added to one part as experimental group and the other part was left untreated as control group. The samples in all groups were frozen for 14 days. Post-thawing, the groups were evaluated for sperm motility, and viability using eosin staining, morphology using the Diff-Quick staining and apoptosis by TUNEL, Annexin-V and caspase-3 activity assay. By using nitrobluetetrazolium test and thiobarbituric acid, the reactive oxygen species (ROS) and lipid peroxidation of sperms were measured, respectively. **Results:** In comparison with control groups, motile and viable sperm concentration was substantially higher in treated groups (P -value <0.05); however, morphological analysis did not show any remarkable changes. Also, ROS and lipid peroxidation values were dramatically reduced by vitamin D (P -value <0.05). TUNEL and Annexin assay for apoptosis were considerably lower in treated groups (P -value <0.05), but caspase activity assay revealed no significant difference between groups. **Conclusion:** The results have shown that the addition of vitamin D to a freezing medium leads to higher quality and function of human sperm.

کلمات کلیدی:

Apoptosis, Human sperm freezing, Infertility, Oxidative stress, Vitamin D

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/942493>



