

عنوان مقاله:

PHOTOBIO-MODULATION WITH 630 NM PLUS 810 NM WAVELENGTHS ON HUMAN SPERMS' MOTILITY AND VIABILITY IN VITRO

محل انتشار:

چهارمین کنگره سلامت مردان و دوازدهمین کنگره مرکز تحقیقات سلامت مردان و بهداشت باروری (سال: 1398)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Fereshteh Safian - *Department of Biology and Anatomical Sciences, Faculty of Medicine, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran*

Mohammad Bayat - *Department of Biology and Anatomical Sciences, Faculty of Medicine, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran. Price Institute of Surgical Research, University of Louisville, and ;Noveratech LLC of Louisville, Louisville, Kentucky*

Marefat Ghaffari Novin - *Department of Biology and Anatomical Sciences, Faculty of Medicine, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran*

Maryam Karimi - *IVF Center, Taleghani Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

Mahsa Kazemi - *Department of Biology and Anatomical Sciences, Faculty of Medicine, Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran*

خلاصه مقاله:

Background and Aim : In current probe we investigated the impact of Red and near-infrared (NIR) ranges of photobiomodulation (PBM) individually and in combination on human fresh sperm in order to validate an optimum protocol of PBM for maximizing sperm motility and viability in-vitro. **Methods :** 30 normal human semen samples were randomly divided into 3 different PBM protocols including Red, NIR, and Red+NIR lasers. Semen was prepared and analyzed based on World Health Organization (WHO) criteria version V. After the routine semen analysis and finding positive results, remaining the semen sample were chosen for the study. Each normal selected sample was divided into four groups, one control group and three experimental groups. Experimental groups were treated with one of the three different protocols of PBM including of red laser, near infra-red (NIR) laser and both red+NIR lasers. Each protocol consisted of three energy densities (0.6, 1.2, and 2.4 J/cm²). Finally samples in each group were analyzed for the progressive sperm motility (PSM), its viability and sperm DNA Fragmentation Index (DFI). **Results :** We found that NIR and red+NIR lasers with 2.4 J/cm² significantly increased PSM after 60 minutes compared to control groups (LSD test, p=0.023, p=0.04). Red laser with 0.6 J/cm², and red+NIR lasers with the all energy densities significantly decreased viability compared to control group (LSD test, p=0.003, p=0.003, p=0.001, p=0.004). There was no significant difference in viability between control and exposure groups in NIR laser. Unlike NIR, in red+NIR and Red lasers with 2.4 J/cm² and 120 minutes after radiation significantly increased DFI compared to control groups (LSD test, p=0.000, p=0.007). **Conclusion :** We concluded that NIR with energy density 0.6 J/cm² did perform better compare .to other PBM protocols and control group, in terms of sperm motility, viability and DFI

کلمات کلیدی:

semen analysis, Photobiomodulation, sperm motility, sperm viability

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