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The Effect of Taheri Consciousness Fields on the Cell Cycle of Raji and HEK-293 Cell Lines under Microgravity Conditions

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Abstract

T-Consciousness Fields (TCFs) as non-material and non-energy fields have been introduced by Mohammad Ali Taheri. Previously, the effect of these fields on the properties of materials was shown to be distinct and different from electric and magnetic fields. However, their effect in the absence of gravity has not been investigated. Gravity is one of the fundamental forces that affect everything in the universe. Its value is expressed as 1G on the surface of the earth. The clinostat simulates microgravity (MG) conditions, allowing experiments to be performed under near-weightlessness conditions. In the present study, two experiments were performed separately. First, the effect of the Faradarmani Consciousness Field, as one of the TCFs, was investigated on the Raji lymphoid cell line for 48 hours under MG stress. According to the data obtained from the flow cytometry assay, apoptosis was observed in the cells exposed to MG, and the percentage of sub-G1 phase in the samples without Faradarmani treatment increased by 85% compared to the treated sample. The percentage of G1 and S phases under Faradarmani was about 135% and 45% higher than the control sample, respectively. In the second experiment, the effect of three types of TCFs on the HEK-293 cell line was evaluated within 24 hours under MG conditions. The results showed that the percentage of the sub-G1 phase in microgravity stress conditions was twice as high as the sample under the influence of TCFs. Also, TCFs caused a significant increase in the S phase up to about 18.6%. According to the obtained results, the application of these fields inhibited the apoptosis caused by MG stress and increased cell survival. These results show that TCFs can function independently of gravity. According to Taheri's theory, the information transmitted due to the application of these fields has caused the development of a new system in the microgravity environment and the compensation of reduced gravity. To better understand the effect of T-Consciousness Fields, it is suggested to measure the state of cellular energy and ATP concentration under 1G and MG gravity with and without applying TCFs.

Keywords: Taheri Consciousness Fields, Faradarmani, Microgravity, Cell cycle, Raji, HEK-293

Introduction

Gravity is a known physical force that has been consistently present throughout Earth's history. Life has evolved in the presence of this fundamental force. For this reason, researchers have always been eager to investigate its effect on the formation and evolution of terrestrial life. The acceleration of any object or something towards the earth is 9.8 m/s2, which is expressed as normal gravity or 1G (1). Astronauts under reduced gravity suffer from numerous physiological problems such as muscle atrophy, cardiovascular problems, bone demineralization and immune system dysfunction (2). For this reason, reducing these physical problems is one of the concerns in the studies of this field (3). Although human space exploration enables scientists to study the mechanisms of adaptation to the microgravity environment, apart from other stressors such as cosmic radiation, large funds must be spent to conduct these experiments. That is why the use of ground facilities such as the clinostat device, which prevents the biological system from understanding the gravitational acceleration vector, is one of the most suitable ways to simulate the microgravity environment (4).

Previously, the effect of TCFs Fields on the magnetic properties of nickel, alumina, and copper has been investigated, and according to the reported results, the magnetization of these metals changed under the influence of these fields (5). This observation confirms the distinctive effect of TCFs. According to Taheri's theory, the information transmitted through these fields can change the properties of materials.

In the present study, the results of two experiments are presented. First, the effect of Faradarmani, as one of the T-Consciousness Fields introduced by Taheri, was investigated on the progression of the Raji cell line cycle under MG, and then, to repeat the observations, a similar experiment was designed on the HEK-293 cell line. This research makes it possible to investigate their effect on cell survival in the MG stress environment of space, in addition to understanding the differences in the nature of these TCFs with gravity.

Materials and Methods

Using Faradarmani Consciousness Field: it is done in accordance with the considerations mentioned in this issue.

Applying microgravity

In this study, microgravity conditions were performed using a clinostat (donated by the United Nations Office for Space Affairs in Vienna to Iran Aerospace Research Institute). Although it is not possible to remove the gravity vector on the surface of the Earth, this device can provide a reliable example of real microgravity space experiments. For this purpose, first, the clinostat was sterilized with ultraviolet rays and ethanol (70%) and then it was placed in an incubator at a temperature of 37 °C.

Cell culture

In this experiment, Raji human B-lymphoblastoid cells and HEK-293 cell line with epithelial morphology isolated from human embryo kidney were purchased from Pasteur Institute of Iran and cultured in Roswell Park Memorial Institute 1640-1640 culture medium containing (Gibco Laboratories, Grand Island, NY) 10% fetal bovine serum, 100 IU/ml penicillin and 100 µg/ml streptomycin were cultured. The cells were kept in a 37 °C incubator (Memmert, Schwabach, Germany) with 5% CO_2 and a humidified atmosphere. To avoid the formation of air bubbles, the flasks were completely filled with the culture medium, and then the samples were placed in a circular holder. They were fixed in a clinostat medium. The rotation speed was 30 rpm (6) and was continued in the apparatus for 48 hours to provide doubling time for the Raji cell and 24 hours for the HEK-293 cell line

Flow cytometry

Harvested cells were washed twice with PBS and vortexed shortly after adding 50 µL of cold PBS (+2 to +8 °C). Then the cells were fixed in one ml of cold 70% ethanol (-20 °C) and vortexed again. After that, the cell suspension was centrifuged at 1000 rpm for five minutes at room temperature, and after removing the supernatant, the cells were washed once with PBS. Then PBS was slowly removed, and one ml MIX MASTER PI solution was added. The final concentration of cells in the said solution should be 5×10^5 cells per ml. Finally, the cells were incubated for 30 minutes at room temperature and read by flow cytometry.

The proportion of cells in different stages of the cell cycle was evaluated using a flow cytometer in the BD FACS caliber system (BD bioscience, San Joe, CA, USA). Cell cycle phases were monitored by FlowJo software (Tree Star, San Carlos, CA).

Master PI mix solution for cell cycle

Propidium iodide (PI) 1 mg/ml: 40 µl, RNase (DNaseFREE) 10MG/ML: 10 µl, PBS, ca+2, mg+2 Free: 950 µl

Statistical Analysis

Each experiment was repeated three times and data were presented as mean ± standard error, then two-way analysis of variance along with multiple comparisons with a 95% confidence interval was performed using GraphPad Prism software (version 9), and significant values less than 0.05 ($p < 0.05$) was presented.

Results and discussion

As shown in Table 1, the sub-G1 phase is about 85% more than the field-affected samples. Therefore, the signs of apoptosis can be clearly observed for the cells in the clinostat. But Faradarmani Consciousness Field has significantly stopped this process. On the other hand, the G1 and S phases in the field-exposed

Table 1. Changes in the percentage of cell cycle phases in the Raji cell line.

Groups	Sub G1	G1	S	G2	Super G2
FCF-/MG	42.10±2.44	20.33±0.80	28.27±0.92	11.17±1.88	0.70±0.31
FCF+/MG	6.29**±0.79	47.78*±0.05	40.85**±1.96	10.17±1.13	0.57±0.33

Significance compared to the control group (FCF-/MG) is shown with an asterisk: **: p-value<0.00001, *: p-value<0.0001. FCF: Faradarmani Consciousness Field, MG: microgravity.

Table 2 presents data related to changes in cell cycle phases in the HEK-293 cell line. As it is known, the percentage of the Sub-G1 phase in the control sample of the microgravity environment is almost twice as much as the sample under the influence of T-Consciousness Fields in these stress conditions.

Apoptotic cells are characterized by specific changes in cell morphology and a decrease in DNA content (sub-G1), and flow cytometry is one of the most important assays for its determination (7).

Table 2. Changes in the percentage of cell cycle phases in the HEK-293 cell line.

Groups	Sub G1	G1	S	G2	Super G2
TCFs-/MG	13.41±0.86	41.14±1.15	28.44±2.47	23.17±0.02	0.61±0.45
TCFs+/MG	7.49*±0.21	38.61±0.60	33.70*±1.65	21.89±0.27	0.42±0.08

Significance compared to the control group (TCF-/MG) is shown with an asterisk: p-value < 0.05. TCFs: T-Consciousness Fields, MG: microgravity.

samples were about 135% and 45% higher than the control sample, respectively. No significant changes were observed in the G2 and super G2 phases.

These changes in the Sub-G1 phase were consistent with other studies. Previously, it has been reported that microgravity stress hurts cell cycle progression and increases apoptosis (8). Another significant change in the cell cycle was the S phase. As shown in Table 2, under the influence of TCFs, the percentage of this phase is significantly higher by about 18.6%. This increase was in line with the changes in the Raji cell line. The induction of the S phase under the influence of TCFs in the MG environment may be related to the induction of growth and proliferation. Also, cell cycle arrest is another possibility that has been proposed as one of the DNA repair pathways under these stress conditions, because it can provide time to repair damaged DNA (9). The effect of TCFs has been investigated in various topics in Earth's gravity. For example, in the case of the HEK-293 cell line, it was observed that the ATP concentration under the influence of these three types of TCFs and in the normal gravity of the earth was significantly higher than the control sample (10). Therefore, to complete the present study, it is suggested to measure ATP production under the influence of these fields and in microgravity conditions. In conclusion, these experiments provide evidence of increased cell survival under microgravity stress. According to Taheri's theory, the information transferred via TCFs has generated a new state in the system under study, which compensated for the reduced gravity and suppressed apoptosis.

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