

## **CYTOKINE CHANGES IN VITRO TREATMENT OF COLORECTAL CANCER CELLS WITH HUMAN UMBILICAL CORD BLOOD-DERIVED MESENCHYMAL STEM CELLS**

Figen Abatay Sel<sup>1, 2</sup>, Ayşe Erol<sup>1</sup>, Mediha Süleymanoğlu<sup>1</sup>, Ayşe Büşra Önder<sup>3</sup>, Dürdane Serap Kuruca<sup>4, 5</sup>, Fatma Savran Oğuz<sup>1</sup>

<sup>1</sup>Istanbul University, Istanbul Faculty of Medicine, Department of Medical Biology, Istanbul, Türkiye

<sup>2</sup>Istanbul University, Institute of Graduate Studies in Health Science

<sup>3</sup>University of Health Sciences, Bakırköy Dr. Sadi Konuk Education and Research Hospital, Istanbul, Türkiye

<sup>4</sup>Istanbul University, Istanbul Faculty of Medicine, Physiology Department, Istanbul, Türkiye

<sup>5</sup>Istanbul Atlas University, Faculty of Medicine, Physiology Department, Istanbul, Türkiye

Mesenchymal stem cells (MSCs) have the capacity for immunomodulation and pluripotency, making them a primary candidate for cell-based therapy. Many types of cancer are being studied with in vitro MSC therapy. The aim of the study is to evaluate the cytokine changes of the apoptotic effect after incubation of in vitro umbilical cord blood MSCs (CB-MSCs) and colorectal cancer cells (CRC).

In this study, CB-MSCs were isolated characterized by flow cytometry. HT-29 cells and CB-MSCs were incubated in different ratios (1:5, 1:10) in transwell co-culture for 72 hours. The apoptosis rates of colorectal cells were also analyzed by FC using Annexin V-FITC/PI. Supernatant cytokine levels (IL-4, IL-17, and IFN- $\gamma$ ) were measured using ELISA method.

In the present study, when we evaluated 72 h 1:5 results, found that IL-4, IL-17 and IFN-  $\gamma$  levels were decreased compared the control. While 72 h 1:10 IL-4 groups were significantly higher than control group ( $p<0.05$ ), 72 h 1:10 IFN-  $\gamma$  groups were significantly decreased ( $p<0.05$ ).

The pro-inflammatory and anti-inflammatory effects of CB MSCs on CRC cells were investigated. According to results, MSC showed different immunological effects after incubation. The immunomodulation of MSC on CRC cells should be investigated in further studies.