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KEY WORDS (at least 5 words)

- ✓ Hyponatremia
- ✓ Dendritic cell
- ✓ Basophil
- ✓ Neutrophil subgroups
- ✓ Monocyte subgroups
- ✓ Breg-Treg

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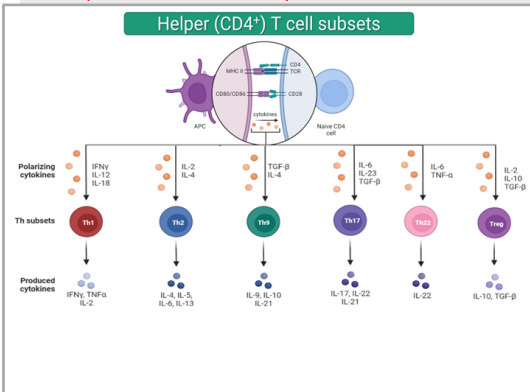


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THE EFFECTS OF THE HYPOOSMOLAR ENVIRONMENT ON THE IMMUNE SYSTEM

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THESIS ABSTRACT

In this study, the effects of hypoosmolar environment on immune system cells were investigated. Lymphocyte, monocytes and granulocyte subgroups were evaluated with peripheral blood samples taken from the patients before and after the treatment.

According to the evaluation, the levels of pE2 (pre Effector memory 2- pre-effector memory 2) and E (effector) cells, which produce high levels of perforin and granzyme B inflammatory molecules in subgroups of CD8+ T cells, increase, while pE1, EM1 (effector memory 1-effector memory) cells that produce low levels 1) and decreased levels of EM4 cells. Th1 (T helper 1- T helper 1), Tc1 (T cytotoxic 1- T cytotoxic) Th17 and Tc17 cells are increased in hyponatremia. This suggests that there is a proinflammatory state in the hypoosmolar environment for memory CD8+ T cells. The increase in Th22 and Tc22 cells may be a response to tissue damage caused by proinflammatory responses and the stress state of the cells, as well as an effect of the increase in TNF- α .

APPLICATION AREAS OF THE THESIS RESULTS

Revealing immune system cells in patients with hyponatremia

ACADEMIC ACTIVITIES

[Muhammed Ali Kizmaz, Abdurrahman Simsek, Tugce Bozkurt, Eren Cagan, Fatma Dombaz, Gulcin Tezcan, Ali Asan, Halil Ibrahim Demir, Salih Haldun Bal, Digidem Yoyen Ermis, Funda Coskun, Emel Yilmaz, Emin Halis Akalin, Haluk Barbaros Oral, Ferah Budak Effector memory T cell subset CD45RA⁺CCR7⁻CD27⁻CD28⁻EM3 increases in direct proportion to the disease severity of COVID-19](#)

[Abdurrahman Simsek, Muhammed A. Kizmaz, Eren Cagan, Fatma Dombaz, Gulcin Tezcan, Ali Asan, H. Ibrahim Demir, S. Haldun Bal, Digidem Y. Ermis, Asli G. Dilektasli, Esra Kazak, E. Halis Akalin, H. Barbaros Oral, Ferah Budak Assessment of CD39 expression in regulatory T-cell subsets by disease severity in adult and juvenile COVID-19 cases](#)

[Eren Cagan, Gulcin Tezcan, Abdurrahman Simsek, Muhammed Ali Kizmaz, Fatma Dombaz, Ali Asan, H. Ibrahim Demir, Haldun Bal, Digidem Yoyen Ermis, Asli Gorek Dilektasli, Esra Kazak, E. Halis Akalin, H. Barbaros Oral, and Ferah Budak The Age-Dependent Role of Th22, Tc22, and Tc17 Cells in the Severity of Pneumonia in COVID-19 Immunopathogenesis](#)