

blood and spleen in male rats

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Background :

Natural killer cells are innate immune lymphocytes that they play a major role in defense against tumors and viral infections. Many factors such as social stress act on the immune system. This type of stress is an important factor in the etiology of psychopathological disorders, including depression and anxiety. Oxytocin is a 9-amino acid hormones synthesize in the central nervous system and some of the peripheral tissue and plays a main role in response to stress, and its injection reduces depression and stress-induced anxiety. The aim of this study was the evaluation of instability stress effect and oxytocin on the number

Methods :

WISTAR rats were subjected to instability stress for 21 days, hence their cage-mate were changed every three days. From the 11th day, a group of rats received 20 microliter and the other group received 40 microliter 1 mg/ml oxytocin and the control group received normal saline by intranasal rout. At the end of study, the animals were anesthesia and then were killed. Blood sample and spleen tissue were obtained and the number of NK cells was counted by flow cytometry by CD3-CD161 + markers

Results:

The number of NK cells in the peripheral blood and spleen was 2.67% and 4.12% (received low dose) and 3.80% and 4.69% (received high dose) and the normal saline group were 5.20% and 4.48% respectively. Statistically, there was no significant difference in the NK cells count in between groups that receiving oxytocin with different doses and with control group.

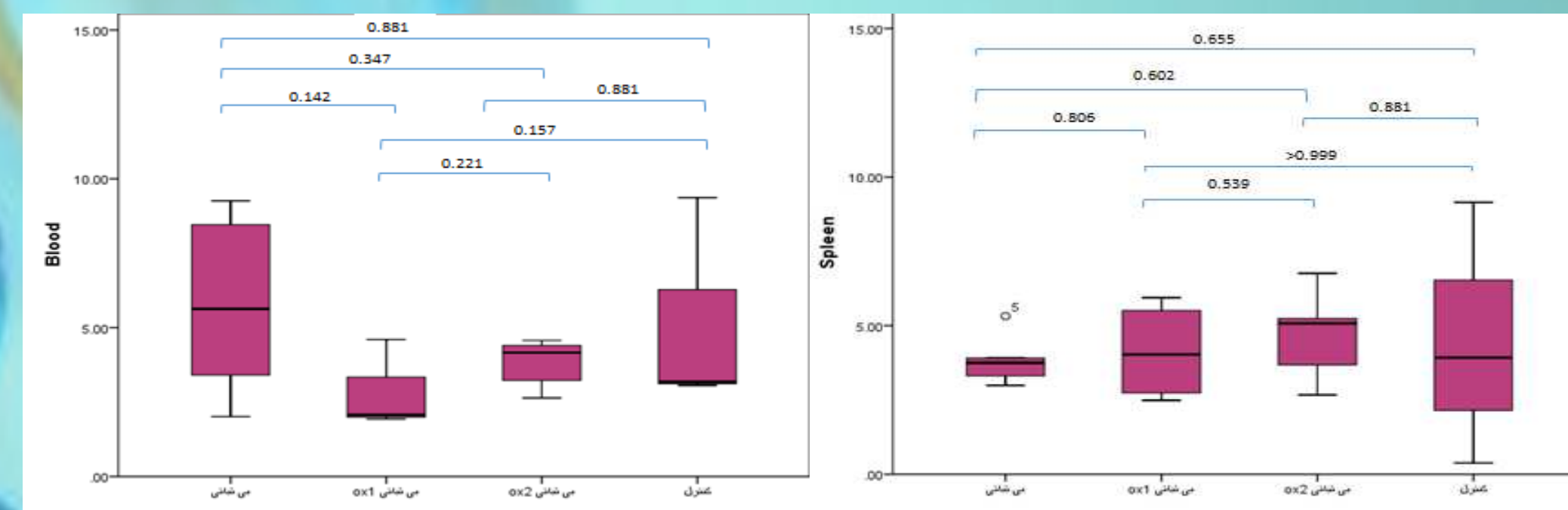


Figure1. median of percentage natural killer cells in whole blood and spleen in difference-groups

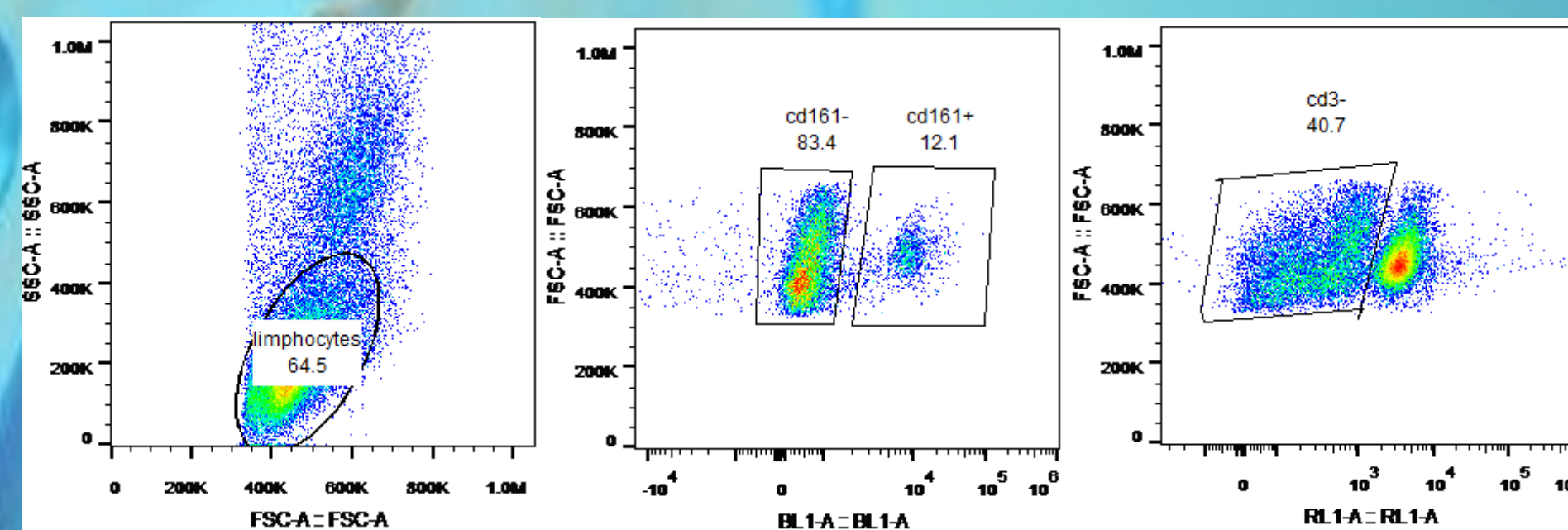


Figure2: instability- oxytocin group .whole blood. Flow cytometry analysis

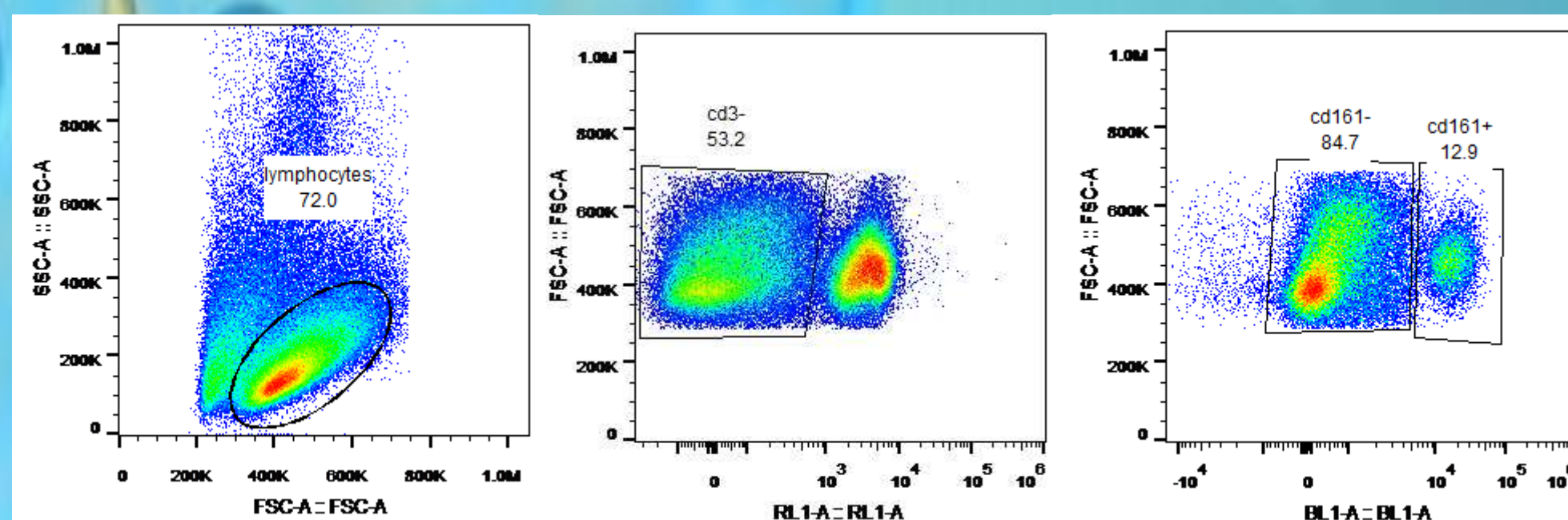


Figure3: instability-oxytocin group.spleen Flow cytometry analysis

Conclusion :

Instability stress had not effect on the number of NK cells in the spleen and blood, and also the doses of 20 and 40 µL of 1mg/ml oxytocin did not a significant effect on the count of NK cells.