



Friday, March 27th – h 14:00
Seminars Room, NICO

The influence of estradiol on microglia polarization

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The anti-inflammatory properties of estrogens in the CNS are under study in our laboratory since several years. Yet, we still lack a thorough understanding of the impact exerted by genetic sex, physiologically circulating estrogens, and the cessation of ovarian functions on microglia phenotype, with potential effects on neuroinflammation (NI) and the onset and progression of neurodegenerative diseases.

We investigated by means of high throughput RNA sequencing the distinctive genetic programs of microglia freshly isolated from the brain of males, intact cycling female mice and ovariectomized females (OVX), as a murine model for menopause. The analysis revealed a particular influence of genetic sex and ovarian hormones on the immune response-related pathways. We integrated these genome-wide studies with in vitro studies on cellular models, and identified distinct molecular mechanisms underlying the action exerted by estrogen on the immune cell activation state.

The presented data will show that peculiar differences exist among males and females that are dictated by genetic sex as well as estrogens and help providing the molecular basis for the gender related differences in the neurodegenerative diseases.

Host: Alessandro Vercelli

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