Nutrition, metabolic disorders, aging, gender-differences, maternal and post-natal environment in incidence of neuropathy and pain: revealing new and selective pharmacological targets for a personalized medicine.

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The personalized medicine is the last frontier in the patient care. Depending on the patient age and sex, it offers a “tailor-made” approach that can revolutionize the therapies in the next ten years.

In this context, the physiological differences, related to different categories of subjects, intertwine with those of age and life’s style in determining the choice of effective and appropriate therapy. The same approach can be applied to the comorbidities associated to different pathologies and disorders that may occur in different way depending on the subject considered.

Several clinical and experimental studies remark a higher incidence of neuropathies and chronic pain development in females and aged people. Adverse environment during pre-and post-natal period is also a factor of vulnerability for these diseases, both in terms of comorbidity of neurological, metabolic and traumatic disorders and of spontaneous onset.

Researchers only recently began to study the factors that predispose female gender, elderly and patients with metabolic disorders (such as obesity and diabetes) to develop neuropathy. Furthermore, innovative studies are trying to figure out the influence of early social interactions (risk and protective factors for pre- and postnatal phases) on inflammatory and chronic pain.

Our studies take advantage of murine models and multidisciplinary approach: behavioural, pharmacological, histological, molecular and biochemical results are integrated to obtain a preclinical research with higher translational power. Moreover, thanks to consolidated collaborations, -omics experiments support our project facilitating the search for biomarkers and new molecular targets for a personalized medicine.

References:

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