

The review of the Italian association of psycho-neuro-endocrine-immunology

Edited by Francesco Bottaccioli

PNEI NEWS

The new knowledge of science and health

IMMUNOPSYCHIATRY

WHEN THE CYTOKINES DISTURB THE MIND



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INTERVIEW

Page 4. How the immune system influences the psyches. An interview with Carmine Pariante

By focusing on the role of the immune system as a key factor, immunopsychiatry emphasizes how important it is researching in this psychiatric field: we have begun to understand how these mechanisms are at the base of mental disorders and also how to use them at a clinical level.

Paola Emilia Cicerone

COVID 19 AND TIME

Page 7. How to manage the psychological and biological time for the psychophysical well-being during Covid pandemic

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OSTEOPATHY-RESEARCH

Page 10. The NAME model: a valid tool for the assessment of children in neonatal intensive care units.

In neonatal intensive care manual treatments play a predominant role. However, the touch is rarely used for diagnostic purposes thus precluding the possibility to collect precious information. This is the reason why the model NAME (neonatal assessment manual score) was created.

A.Manzotti, F.Cerritelli, M. Chiera, E. Lombardi, S. La Rocca, P. Biasi, M.Galli, J.Esteves, G. Lista

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Page 16. CHRONIC BACK PAIN: ARE NEUROSCIENCES INDICATING A WAY FOR A MORE EFFECTIVE OSTEOPATHIC TREATMENT?

Studies using neuroimaging and fMRI have changed the perspective on how to frame this invalidating disease.

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EDITORIAL

Immunopsychiatry and psychoneuroendocrineimmunology

Francesco Bottaccioli – University of Aquila and Turin. Honorary Sipnei Chairman.

In the interview kindly given to our review, Carmine Pariante, Professor of Psychiatry at King's College in London and worldwide renown authority in the field of biological psychiatry, depicts a research area that reshaped the way to consider mental disorders: immunopsychiatry.

A significant number of people affected with depression show in their blood clear signs of inflammation with an increase of C-reactive protein and the IL-1b, IL-6, TNF-a cytokines. At the same time people treated with inflammatory cytokines such as interferon (used for the treatment of viral hepatitis) show signs of depression and alterations in brain circuits at the functional magnetic resonance (fMRI). As illustrated in this text *figure* the alterations in the main circuits and neurotransmitters explain the presence of some psychological signs such as the lack of pleasure (anhedonia), anxiety, depression.

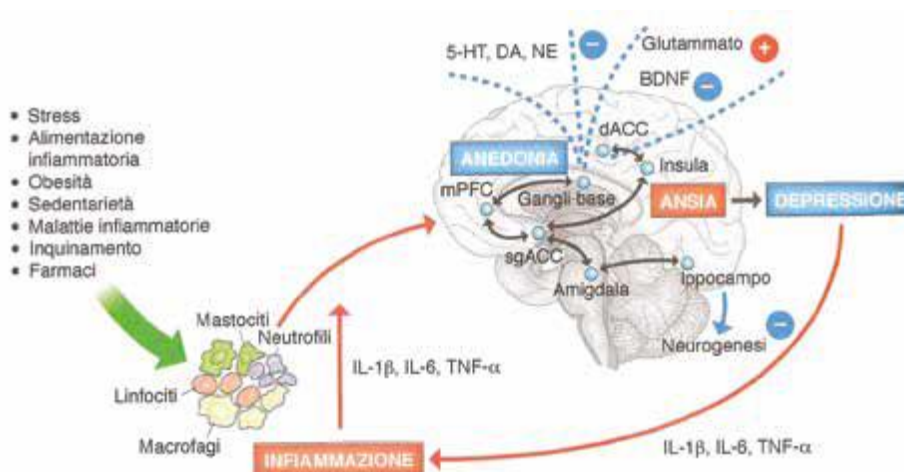
These alterations are also accountable for damages occurring in the hippocampus on the long term with the block of neurogenesis and brain plasticity and in other strategical brain areas.

The two dimensions (psychological and biological) must always be considered together; only by doing this it is possible to explain how inflammation may cause a person to be less receptive to changes (by altering hippocampus and substantia nigra) and more prone to see dangers rather than opportunities (by altering the ventral striatum) as proven by experimental studies lead on healthy volunteers.

The text *figure* shows also another fundamental concept that we have often described¹: the source of inflammation is multiple. It may be due to psychological factors (stress, depression and other mental disorders). It may depend on individual physical conditions (obesity, inflammatory diseases), on collective conditions (pollution, social discrimination), and behaviours (inflammatory eating habits, sedentary lifestyle, pharmaceutical treatments, use of drugs).

Hence the need of a radical change in the treatment of psychiatric disorders. An approach which considers the whole factors determining such disorders and proposes a treatment that combines dietary indications, physical exercise, stress management techniques, psychotherapy and control of the inflammation also by means of non-pharmacological therapies. After the innovation brought by the new studies on the role of inflammation, the risk on the horizon is that, under the lead of pharma industry, research and clinical practice will end up using the traditional and new anti-inflammatory drugs to be combined with anti-depressants drugs. This would mean the total loss of such an important innovative work resulting from the many years engagement of Pariante² and other colleagues in the world (with our contributions, if we may say so).

We should never lose sight of the whole: namely the psychoneuroendocrineimmunology approach.



Text figure

1. Bottaccioli AG, Bottaccioli F, Minelli A. Stress and the psyche-brain-immune network in psychiatric diseases based on psychoneuroendocrineimmunology: a concise review. *Ann NY Acad Sci.* 2019;1437(1):31-42. doi:10.1111/nyas.13728

2. Pariante CM. Why are depressed patients inflamed? A reflection on 20 years of research on depression, glucocorticoid resistance and inflammation. *Eur Neuropsychopharmacol.* 2017;27(6):554-559. doi:10.1016/j.euroneuro.2017.04.001