

Pain in gynecology and neuroinflammation: the evil twin

Background

Chronic pain and inflammation frequently co-occur with mood disorders such as anxiety and depression. Affective disorders show a high prevalence in women affected by pelvic pain/gynecologic pathologies. Chronic inflammation, chronic pelvic pain (CPP) and depression comorbidity suggests the existence of common pathogenic mechanisms whose identification can facilitate diagnosis and therapy.

Method

Review of the key literature with a clinical perspective.

Results

Immune system dysregulation is emerging as a common event in these conditions. Mast cells (MCs) are considered as:

1. cellular sensors in inflammation and immunity;
2. coordinators of peripheral inflammatory processes;
3. important players in the development of neuroinflammation, contributing to the biological basis of depression due to their capacity to interact with glia.

MCs might pilot the low-grade inflammation present in chronic pain and mood disorders such as anxiety and depression. Peripheral inflammation leads to pelvic pain and neuroinflammation; the former potentiates neuroinflammation and associated disorders, while depression may potentiate the perception of pain.

As a clinical consequence, a female patient complaining of pain and CPP should no longer be told that «pain is all in your head», as these words ignore the inflammatory biological substrates of pain. Moreover, such statements reduce the therapeutic potential of a correct biological reading of depression and pain, as epiphenomenon of a systemic inflammatory process. This evidence opens the possibility to target MCs to act on common inflammatory mechanisms of mood disorders and chronic pain.

Conclusion

The aim of the lecture is to update the main evidence supporting existence of a common neuroimmune dysregulation, mainly driven by MC, in patients affected by depression associated with pain in gynecology, with focus on CPP.