The central (CNS) and peripheral nervous system (PNS) are targets for steroids hormones coming from the peripheral steroidogenic glands and neurosteroids produced in the nervous system. The term neuroactive steroid is used to include both hormonal steroids and neurosteroids that are active in the nervous tissue. Neuroactive steroids exert a variety of physiological effects and represent interesting tools for therapeutic strategies against neurodegenerative and psychiatric disorders. Many of these disorders show sex differences in their incidence, symptomatology and neurodegenerative outcome. Data we have obtained by liquid chromatography-tandem mass spectrometry show that in control animals the levels of neuroactive steroids are different: a) between PNS and CNS, b) among CNS areas, c) between plasma and nervous system and d) between the two sexes. As demonstrated in different experimental models of neurodegenerative and psychiatric disorders, these levels are affected by the pathology in a sex dimorphic way. These observations might provide the basis to design sex-specific neuroprotective therapies based on neuroactive steroids.

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