



Profiling of neuroactive steroids, their precursors and metabolites in the patients suffering from multiple sclerosis

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Introduction

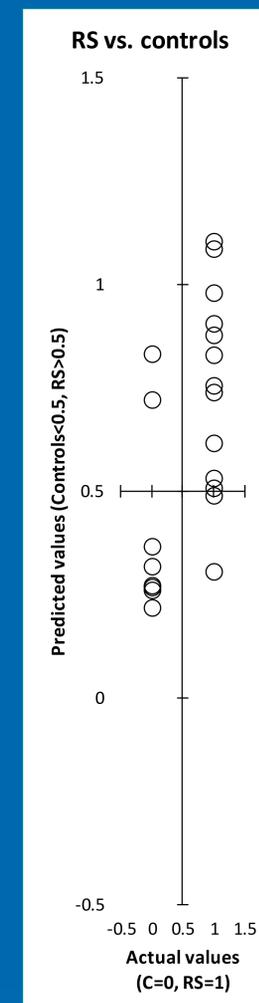
Multiple sclerosis (MS) is the most common cause of neurological disability in young adults.

Some steroids modulate the permeability of ionotropic receptors on cell membranes and therefore may activate or inhibit neuronal activity depending on the steroid structure.

These neuroactive steroids (NAS) exert neuroprotective effects

Method

We have followed the neuroprotective, GABAergic glycinergic, glutamatergic acetylcholinergic and purinergic NAS, their precursors and metabolites and their conjugates (64 steroids) in the circulation and cerebrospinal fluid of 13 female patients- 36 years old median age and 8 sex age matched healthy controls (both in the follicular menstrual phase) with the use of gas chromatography – mass spectrometry.



Conclusion

- The primary finding was the increased levels of C21 steroids in patients body fluids, which points to increased activity of adrenal cortex as mechanism enabling a consequent synthesis of neuroprotective steroids in various human peripheral tissues. The neuroprotective effects of individual steroids and a possible utilization of the results for the diagnosis and treatment of MS were discussed.