DEEP BRAIN STIMULATION AS A NEUROMODULATIVE TREATMENT FOR OBSESSIVE COMPULSIVE DISORDER

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1. Which is the ethiology of obsessive-compulsive disorder?
2. Which is the biological basis underlying deep brain stimulation applied to obsessive-compulsive disorder?
3. Is deep brain stimulation a potentially alternative treatment for obsessive-compulsive disorder, a stress related pathology? And if so, 4. Does corticosterone play a role in this fact?

INTRODUCTION

DEEP BRAIN STIMULATION

- Electrical stimulation of brain tissue performed directly into a desirable brain region

OBSESSIVE-COMPULSIVE DISORDER

- Chronic heterogeneous psychiatric disorder (2-3% worldwide)
- Characterized by recurrent intrusive thoughts and/or repetitive compulsory behaviors

OCD PATHOPHYSIOLOGY

- Cortico-striato-thalamo-cortical pathway
- Cortico-striatal loops
- DBS normalizes NAc activity and restores intrinsic frontostriatal network dynamics
- Border of NAc core & IC as the most effective target

CONCLUSIONS

- A malfunction of CSTC pathway is thought to be the cause of OCD
- DBS seems to restore frontostriatal network dynamics leading to an improvement of OCD symptoms
- DBS at IC seems to have an effect on cortical corticosterone release
- DBS is currently under investigation, in order to elucidate some critical aspects about its working mechanism which are still unknown, stimulated by the great results already obtained

REFERENCES