

Neuropsychanalytic Prerequisite for Diagnosis of Psychiatric Unbalance

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ABSTRACT

It was recently added by Cai to neuropsychanalysis the ascending noradrenergic (NA), serotonergic (5-HT) and acetylcholinergic (ACh) systems, differentiating the emotions/memories/conscious balance in waking and sleep for depression, as well as the ascending dopaminergic (DA) and ACh systems to motivation/selfishness/knowledge balance for schizophrenia. For psychiatric diagnosis, it is just delineated the psychological unbalance resulting from the detected pathologies by neuropsychanalytic interactions and conflicts as indispensable prerequisite.

Keywords

Psychiatric diagnosis, Reticular formation, Emotional balance, Memory, Neuroimaging.

Introduction

Freudian psychoanalysis demonstrated the psychiatric emotional unbalance with three psychological elements as unconscious/preconscious/conscious in topographic theory [1,2] and id/ego/super-ego in structural theory [3]. To reconcile with the updated scientific neuropsychology, Cai corresponded the psychologically similar concepts of emotions/memories/conscious to unconscious/preconscious/conscious [1,2], and motivation/selfishness/knowledge to id/ego/super-ego [3], respectively.

As supplements, Cai added to neuropsychanalysis the ascending noradrenergic (NA), serotonergic (5-HT) and acetylcholinergic (ACh) systems to differentiate the waking and sleep for regulating emotions/memories/conscious (or unconscious/preconscious/conscious) balance for depression [1,2], as well as the ascending dopaminergic (DA) and ACh systems directly to motivation/selfishness/knowledge (or id/ego/super-ego) balance for schizophrenia [3].

Recently, it was further classified these ascending NA, 5-HT, DA and ACh systems altogether as the fourth element reticula of neuropsychanalysis [4], supplementing the three emotions/

memories/conscious (or unconscious/preconscious/conscious) elements and three motivation/selfishness/knowledge (or id/ego/super-ego) elements of present psychoanalysis.

Psychiatric diseases are characterized as psychological unbalance, with emotional unbalance as the common and important symptom. In this short paper, it is adopted the newly supplemented neuropsychanalysis for diagnosis of psychiatric unbalance, simply in depression and schizophrenia for demonstration.

Diagnosis in Depression

In depression, the ascending NA, 5-HT, and ACh systems differentiate in their discharge and result in waking, slow wave sleep (SWS) and rapid eye movement (REM) sleep [1,4], with the REM sleep processing emotional memories and shifting the emotional balance toward depression [1,2], while the SWS functioning in reverse to restore the emotional balance disrupted by accumulated emotional memories in waking [1,2].

In diagnosis, the disturbances of SWS result in the unbalance of emotions in depression from accumulation of emotional memories in waking and REM sleep [1,2], while excessive REM sleep can not only accumulate emotional memories, but also reduce muscle tone of motivation, both of which can result in depression [2].

In detection, neuroimaging studies revealed the hippocampus,

amygdala, orbitofrontal and cingulate cortices as mostly affected brain regions in depression [5,6], the brain structures for both emotions and memories. Meanwhile, pharmacological and biochemical studies revealed both NA and 5-HT as relevant to depression [7]. The affected brain structures for emotions, memories and NA/5-HT can result in depression.

Diagnosis in Schizophrenia

For schizophrenia, Cai recently supplemented the ascending DA and ACh systems to the Freudian structural theory [3,4], with DA overall selective on knowledge (super-ego) and perception, excitatory or disinhibitory to motivation (id) and beneficial to selfishness (ego) including habits and procedural memories [3].

In detection, neuroimaging studies revealed DA as increased in function in associative stratum in schizophrenia [8,9]. Besides, neuroimaging studies also suggested the hypoconnectivity between prefrontal-limbic cortices and thalamic nuclei, as well as the hyperconnectivity between primary-sensorimotor cortices and thalamic nuclei [10,11], extending consistently to basal ganglia in schizophrenia [11].

In diagnosis, because schizophrenia manifests increased selfishness (ego), the elevated DA in stratum may inhibit the influences from knowledge and perception of sensorimotor cortices to thalamic nuclei, and in turn reduce the thalamic relay of their influences to prefrontal-limbic cortices, while not further inhibit the the selfish action and related procedural memories of prefrontal cortices. Obviously, it is necessary to consider the psychological symptoms of schizophrenia, and to match the neuroimaging results to the psychological outcomes. In such diagnosis, the new neuropsychanalysis supplemented with DA is indispensably required as a prerequisite.

Limitations

Because of the limited length of the short paper, only depression and positive schizophrenia are considered for demonstration how to use the newly supplemented neuropsychanalysis for psychiatric diagnosis, while other psychiatric diseases can be diagnosed in similar way.

Conclusions

In conclusion, the new neuropsychanalysis supplemented with the ascending NA, 5-HT, DA and ACh systems is indispensable for diagnosis of psychiatric unbalance. Depression and positive schizophrenia are exemplified to demonstrate how to use the newly supplemented neuropsychanalysis for psychiatric diagnosis as prerequisite. It is expected to extend such method of diagnosis to other psychiatric diseases.

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