ENDORPHIN AND PROLACTIN LEVELS IN SCHIZOPHRENIC PATIENTS UNDER NEUROLEPTIC THERAPY

By

Baher A.A.E. Masseud

M.B. B.Ch. M.Sc. Internal Medicine

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Faculty of Medicine

Ain Shams University

Supervised by

Prof. Abou Maati Kabil
Professor of Medicine
Ain Shams University

Prof. Mustafa Kamel Ismail
Professor of Psychiatry
Ain Shams University

Prof. S.A. Raafat
Professor of Medicine
Ain Shams University

Dr. Mohamed Fahmy
Assistant Professor of Medicine
Ain Shams University

Dr. Mohamed Shams
Lecturer in Psychiatry
Ain Shams University

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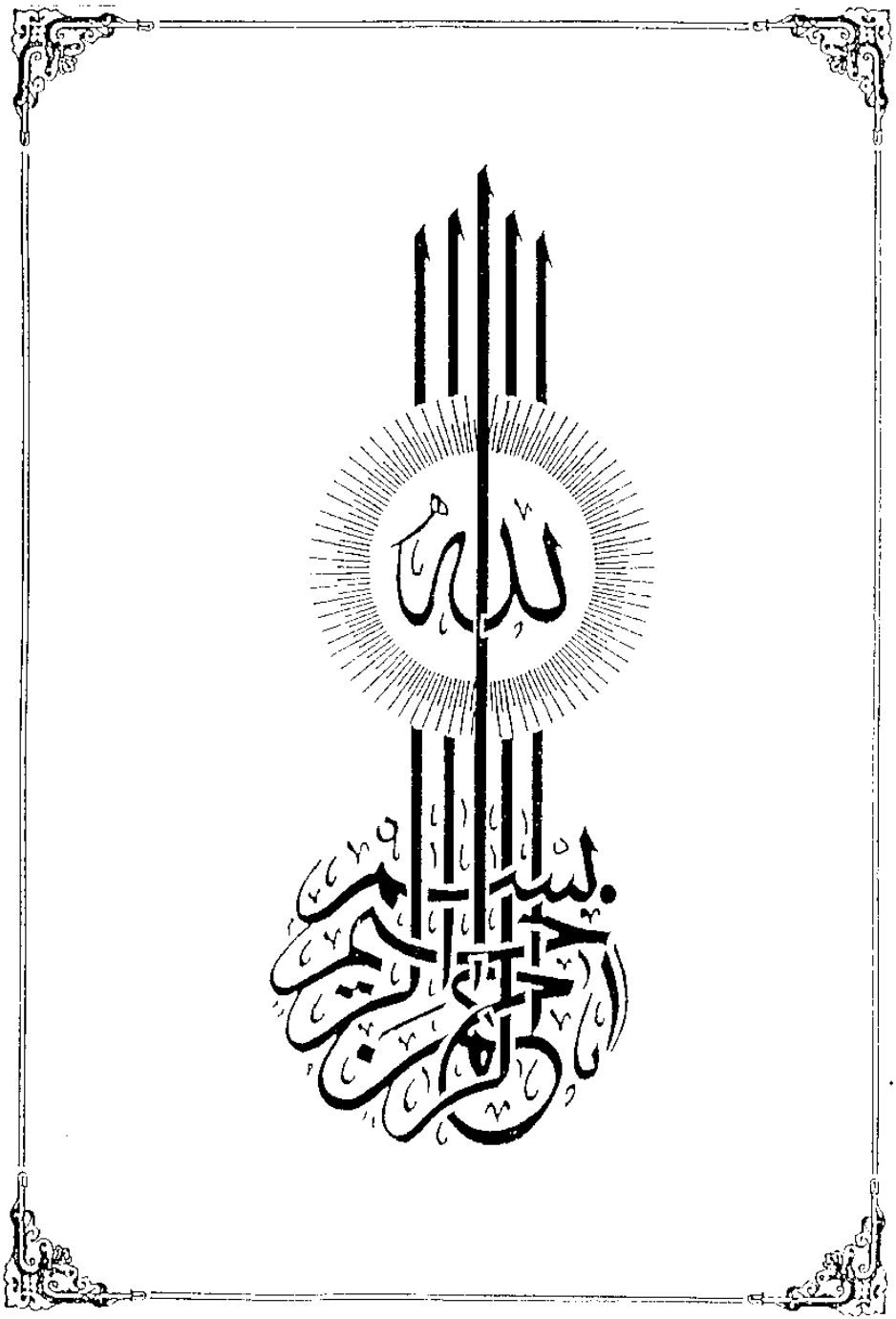

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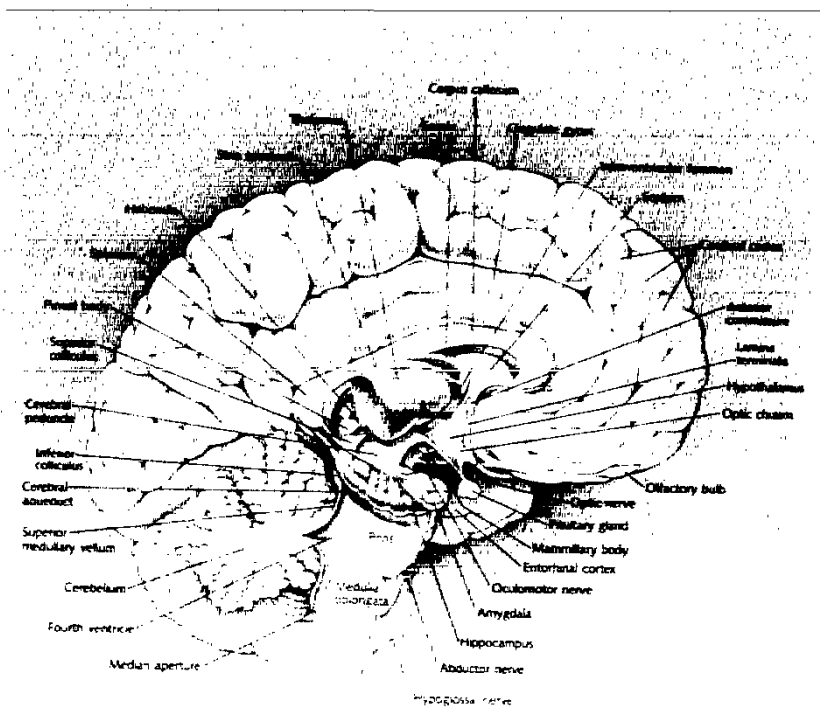

Fig. 1 Important anatomical structures in the human brain (from drugs and the brain, Snyder, S.H., p. 17, 1986).

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INTRODUCTION

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INTRODUCTION

In insanity we do not discover anything new or unknown; we are looking at the foundations of our own being, the matrix of those vital problems on which we are all engaged ... it makes no difference to the facts whether these disturbances are called dementia praecox or by some other name [172].

The symptoms of what is now called Schizophrenia have fascinated physicians and philosophers for thousands of years. However, the search for the causes and the cures of Schizophrenic manifestations was impeded by the fact that what is now known as Schizophrenia was not even described as a disease entity until 1896, when Emil Kraeplin [102] brought together, under the term dementia praecox, a variety of psychotic syndromes previously believed to represent separate diseases.

The Schizophrenias are a group of psychoses, the course of which is at times chronic, at times marked by intermittent attacks, which can remit at any stage, but probably never without leaving behind some defect of personality. The disease is characterized by a specific type of alteration of thinking, feeling and relation to the external world [172].

Many theories as to the possible cause or causes of Schizophrenia have been put forward. But there are insufficient data to decide which is the correct theory [94]. One of the theories suggests that the symptoms of Schizophrenia maybe due to alterations in the usual relationships between neurotransmitters. But this alone cannot explain the whole pathophysiology of the syndrome [94].

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Neurotransmitters are chemical substances that transfer information in the C.N.S. and peripheral nervous system and establish intercellular communication. It is at this point where neuropsychiatry and neuroendocrinology meet. Between 1927 and 1975 less than 10 neurotransmitters were discovered. In 1984, this number has risen to more than 50 [168].

Most research in the field of psychiatry in general and Schizophrenia in particular has focused on the monoamine neurotransmitters. Recently, this focus has shifted to the peptide neurotransmitters, particularly to the opioid peptides, the endorphins [94].

A study by Davis [40] revealed a significant clinical improvement in Schizophrenics receiving naloxone. This might point to a role played by opioid peptides in the pathophysiology of Schizophrenia.

The greatest stimulus for research into neuropeptide neurobiology was the discovery that the various endocrine axes are organized in an hierachical fashion, with the C.N.S. at the summit. The chemical regulation, the releasing and inhibiting factors, are now known to be neuropeptides. The findings have not only resulted in major diagnostic and therapeutic breakthroughs in clinical endocrinology, but have had considerable impact on the field of psychiatry as well. It is now becoming more evident that particular psychiatric disorders are often associated with robust and reproducible neuroendocrine abnormalities [140].

Neuropeptides are important neuroregulators in the C.N.S. They function as neurotransmitters and neuromodulators and,

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consequently, they also modulate behaviour. Moreover, some evidence is concordant with the view that alterations of specific neuropeptide - containing neurons occur in certain neuropsychiatric disorders, including Schizophrenia [140].

At the present time, the data provided by measuring opioid peptides in both plasma and C.S.F. are contradictory and confusing and provide no compelling evidence for a significant role of endorphins in Schizophrenia [140].

Considerable evidence points to the involvement of dopamine, as a C.N.S. neurotransmitter, in the pathophysiology of schizophrenia and other psychoses [106].

The direct measurement of dopaminergic activity in the human brain is not presently possible. Because the secretion of the anterior pituitary hormone prolactin is under tonic inhibition of a specific C.N.S. dopaminergic system, measurement of prolactin secretion has been used as an index of dopamine activity in Schizophrenia and its response to neuroleptic therapy [160].

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AIM OF THE WORK

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AIM OF THE WORK

Alterations in Dopaminergic and peptidergic system functioning are thought to contribute to the pathogenesis of Schizophrenic psychosis.

The aim of our work is to study the changes in blood levels of β-endorphin and prolactin (as an index of dopaminergic system functioning) that occur in patients suffering from Schizophrenia before and after treatment using neuroleptic drugs and whether these changes have any clinical significance whether it maybe diagnostic or prognostic. Most research has been performed in foreign countries. Our study will be conducted on Egyptian patients.

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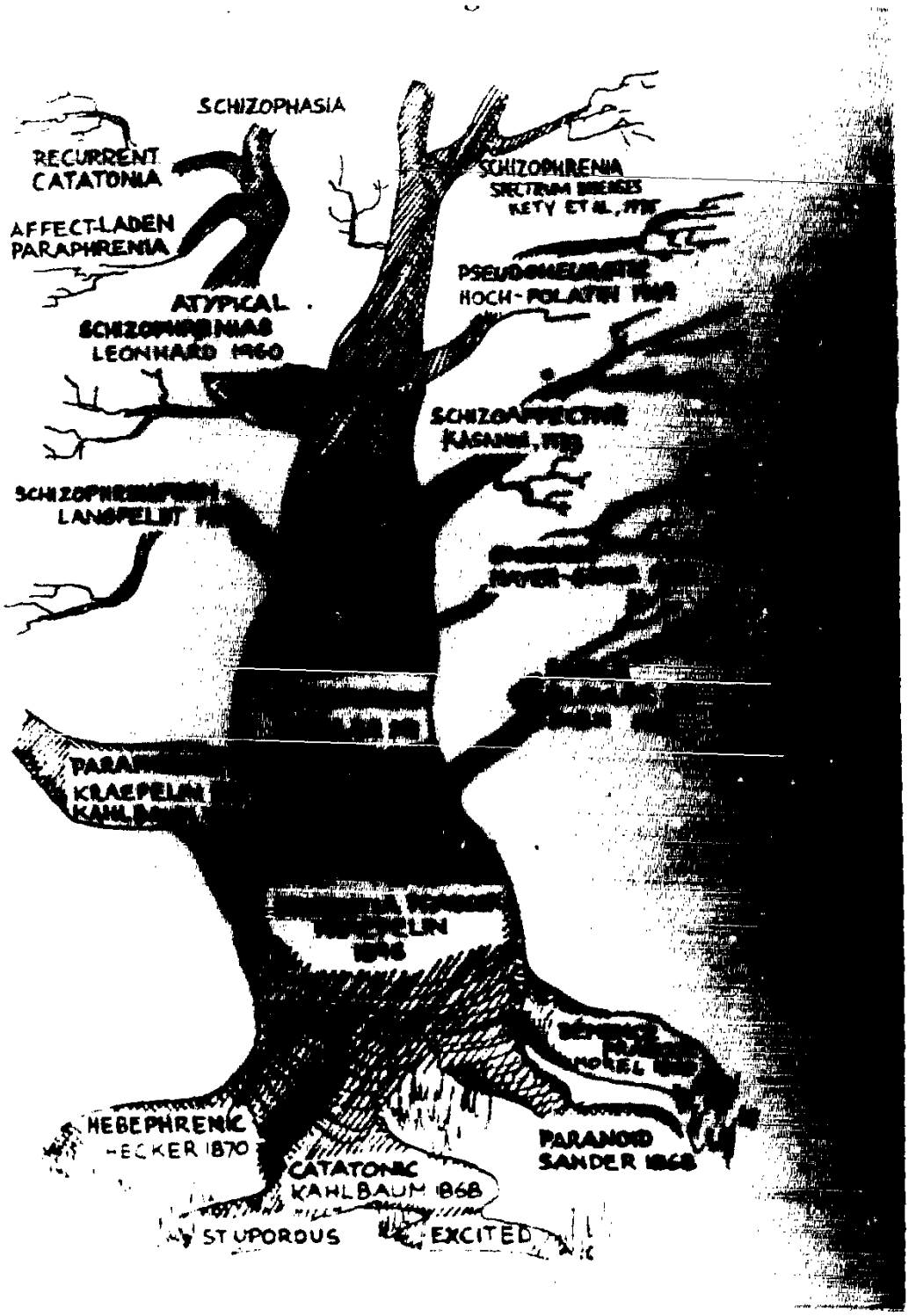

Fig. 1 Historical growth and varieties of classification of the schizophrenia concept. (Kaplan & Saddock, edit. Modern Synopsis of Comprehensive Textbook of Psychiatry/III, 1981; W.W., Baltimore, London).

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