POLYSOMNOGRAPHIC CHARACTERISTICS OF MOOD DISORDER (DEPRESSIVE EPISODE)

A Thesis

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M.Sc. Degree in Neuropsychiatry

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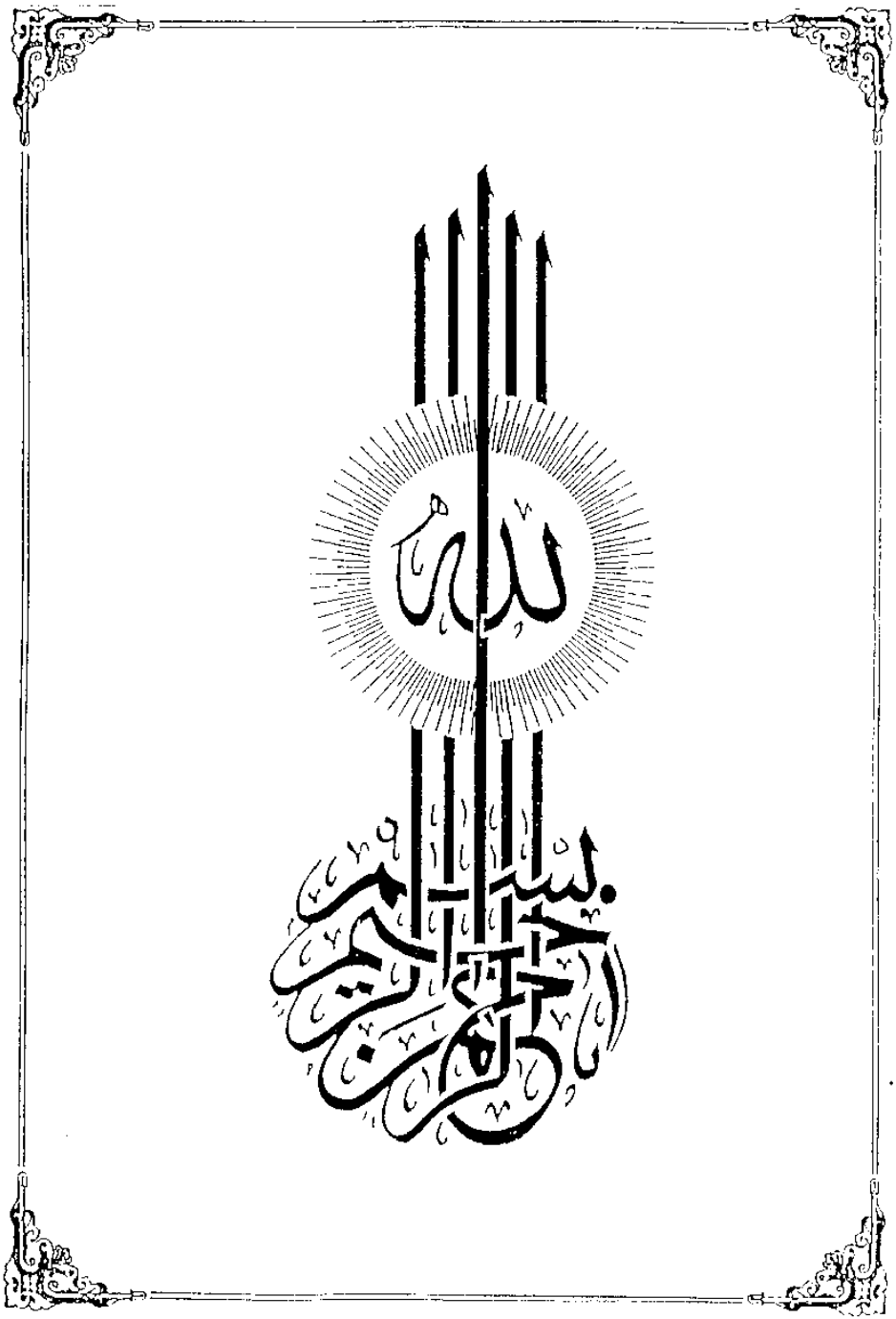

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ABBREVIATIONS USED IN THE THESIS

5HT	:	5 - Hydroxy Tryptamine (Serotonin)
ACTH	:	Adreno Cortico Tropic Hormone
BP	:	Blood Pressure
BSC	:	Brain Stem - Cerebellar Complex
CBF	:	Cerebral Blood Flow
ChAT	:	Choline Acetyl Transferase
CRF	:	Corticotropin - Releasing Factor
CSF	:	Cerebro Spinal Fluid
DA	:	Dopamine
DSIP	:	Delta Sleep - Inducing Peptide
DST	:	Dexamethason Suppression Test
ECT	:	Electro Convulsive Therapy
EEG	:	ElectroEncephalo Gram
EMG	:	Eelctro Myo Gram
EOG	:	Electro Oculo Gram
GABA	:	Gamma - Amino Butyric Acid
GH	:	Growth Hormone
HPA	:	Hypothalamic - Pituitary - Adrenal
HR	:	Heart Rate
MAOI	:	Mono Amine Oxidase Inhibitor
MSH	:	Melanocyte - Stimulatiry Hormone

MSLT	:	Multiple Sleep Latency Test
NA	:	Noradrenaline = Norepinephrine
NPT	:	Nocturnal Penile Tumescence
NREM	:	Non- Rapid Eye Movement
OSA	:	Obstructive Sleep Apnea
PCPA	:	P-Chlor Phenyl Alanin
PG D2	:	Prosta Glandin D2
PGE2	:	Prosta Glandin E2
PGO	:	Ponto - Geniculo - Occipital
PS	:	Paradoxical Sleep
PSG	:	Polysomnography
RAS	:	Reticular Activating System
REM	:	Rapid Eye Movement
RF	:	Reticular formation
RNA	:	Ribo Nucleic Acid
SCN	:	Supra Chiasmatic Nucleus
SWS	:	Slow -Wave Sleep
TCA	:	Tri Cyclic Antidperessant
TRF	:	Thyrotropin Releasing Factor
TSD	:	Total Sleep Deprivation
TSH	:	Thyrotropin Stimulating Hormone
VIP	:	Vaso active Intestinal Peptide

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INTRODUCTION

Major depression is common disorder and is reported to have a life time prevalence of 8-12 percent in men and 20-26 percent in women (Benca, 1994).

Disturbed sleep is characteristic of patients with mood disorders and most patients with major depression complain of insomnia. Specific features may include difficulty falling asleep, early morning awakening, decreased total sleep and disturbing dreams (Claghorn et al, 1981).

The discovery of rapid eye movement sleep by Aserinsky and Kleitman in 1955 initiated the era of sleep research. Standardization of terminology and techniques for polysomnographic recording and scoring have been documented in 1986 (Rechtschoffen & Kales,1986) since that, many sleep researches have been done in different laboratories in different psychiatric disorders. Studies in depressed patients revealed polysomnographic abnormalities which may include; disturbed sleep continuity, shortened rapid eye movement latency and reduced slow wave sleep (Benca et al, 1992).

Sleep studies in major depression may add to the diagnosis by detecting occult primary sleep disturbance as sleep apnea which may hinder the treatment of depression (Kaplan, 1992). Also it may help in the management via manipulation of the sleep-wake cycle as REM deprivation which can be used as an adjuvant to pharmacologic treatment (Sandyk, 1992).

AIM OF THE WORK

To identify the sleep pattern in mood disorder (depressive episode) in patients with different severities, with and without psychotic features.

Review of literature

HISTORICAL DEVELOPMENT OF IDEAS ON SLEEP

The first anatomo-clinical documents dealing with the neurophysiological determinism of sleep were published by Gayet (1875). He indicated the importance of a rostral mesencephalic lesion for the pathogeny of lethargic syndromes. The study of the pathology of viral encephalitis led Von Economo (1929) to the description of two opposite syndrome: the one of hypersomnia, the other of sleeplessness. In the case of the lethargic patients the predominant site of lesions was in the mesencephalic tegmentum and in the posterior hypothalamus, while in the insomniac ones, the lesion affected mainly basal forebrain and adjacent striate structures. Nauta (1946) described the effects of various brain lesions on the sleep-wake cycle of the rat. Nauta stated the presence of waking "center" at the mesencephalo-hypothalamic junction , and a hypnogenic structure in the basal preoptic area.

Moruzzi and Magoun (1949) discovered the arousal effect of electrical stimulation of the mesencephalic reticular tegmentum. The arousing power of the ascending reticular impulses led to the idea that an essential factor in the determinism of sleep is the dampening of the activating reticular system. A dampening thought to result either from a functional depression, by fatigue or intoxication of neuronal populations, or from a critical reduction of the afferent support of their tonic activity, or by a combination of the two factors. This explanation did not exclude the possibility of a co-operation of active inhibitory mechanisms in the process of sleep induction (Bremer,

1975). Bonvallet and her associates (1963) demonstrated the existence of a hypnogenic structure in the caudal brain stem. Sterman and Clemente (1962) demonstrated another hypnogenic structure in the same basal preoptic area which had been already postulated as having such a role by Von Economo and by Nauta. By this, they commented on the evolution of the concepts concerning the neurophysiological determinism of the hypnic phenomenon as if sleep was a unitary state . But , an important development occuring in 1957 forced us to abandon this unitary state and to admit the fundamental dualism of sleep states. It was the discovery of REM sleep on EEG basis by Dement and kleitman (1957). Aserinsky and kleitman (1953) reported rapid, saccadic eye movements, similar in appearance to waking eye movements, associated with reports of dreaming. Berger (1972) discovered the loss of neck muscle tone which accompanies REM sleep. These two findings, linking EEG patterns with eye movement and neck muscle activity, have formed the basis of the recording and scoring methods for humans now in use all over the world.

BASIC SLEEP MECHANISMS

Definition:

Sleep is regarded as an active physiological process with clearly defined electrocorticographic and behavioral changes, dependent on specific neurochemical activity of the brain stem nuclei and areas extending from the medulla to the posterior diencephalon (Moruzzi, 1963).

According to a simple behavioral definition, sleep is a reversible behavioral state of perceptual disengagement, and unresponsiveness to the environment. It is also true that sleep is a very complex amalgam of physiological and behavioral processes (Carskadon and Dement, 1989).

Sleep architecture:

Within sleep, two separate states have been defined based on a constellation of physiological parameters. These two states are non-rapid eye movement (NREM) and rapid eye movement (REM).

NREM sleep is conventionally subdivided into four stages; stage 1,2,3 and 4 which are relatively differentiated from one another.

REM sleep is defined mainly by a specific EEG pattern, muscle atonia, and episodic bursts of rapid eye movements.

REM sleep is generally not divided into stages, though tonic and phasic types are often distinguished. Tonic versus phasic distinction is based upon short-lived events that tend to occur in clusters separated by episodes of relative quiescence. The most commonly used marker