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RESEARCH ARTICLE

ROLE OF INSOMNIA IN DEPRESSION AND STRESS.

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Abstract

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Introduction:-

Chronic insomnia is a risk factor for the development of psychiatric disorders, including depression, as well as a prodrome of major depressive episodes, a consequence or complication of depression that often persists beyond the clinical episode, and a prognostic indicator of long-term illness course and treatment response.(3)

In addition, sleep is physiologically abnormal in persons at risk for depression; for example, shortened REM sleep latency is present not only during clinical episodes of depression, but also before the clinical episode in subjects at risk for depressive illness.(6) Although insomnia usually disappears as depression is treated, it may persist, indicating heightened vulnerability to depressive relapse or recurrence. (11)Physiological changes in sleep related to depression correlate with the likelihood of response to psychotherapy alone and may also identify which patients are unlikely to do well with psychosocial treatment and, therefore, to need somatic therapy in order to preserve recovery. (3)

The purpose of this scientific issue is to review the role of insomnia in case of depression .Sleep disorders occur frequently in patients with depression. Insufficient or excessive sleep, as well as dysfunctions of sleep rhythm are likely to occur during depression.(2)The sleep wake cycle is regulated by two interacting processes, the circadian process and the homeostatic process.The former regulates the daily rhythms of the body and the brain this is mainly due to the suprachiasmatic nucleus of the hypothalamus which provides an oscillatory pattern of activity regulating fundamental mechanisms ,eg. sleep wake activity ,hormone release ,and liver function .the most common sleep disorders in depression are ,nightmares insomnia, ,and hypersomnia.(3)

Insomnia is considered to be the most common sleep disorder . However, insomnia has always been and still is an under recognised and therefore under treated problem ,since about 60% of the people suffering from insomnia never talk to their physicians about their sleeping difficulties.several factors , such as gender , age , socioeconomic status have been associated with the prevalence of insomnia .(1).

Insomnia occurs more frequently in women ,both in terms of symptoms reported and of daytime consequences .(3) Insomnia is considered a difficulty in initiating or maintaining sleep and nonrestorative sleep disorder accompanied by decreased daytime functioning and persisting for at least 4 weeks . The most common form of insomnia was difficulty initiating sleep and early morning awakening had a prevalence of about 23.6% insomnia may occur in 60 – 80% of patients with major depression.depressive symptoms are important risk factors for insomnia(3)

Insomnia complaints can include difficulty falling asleep ,difficulty staying asleep ,waking up too early and having that is not refreshing. Adolescents have more problems falling asleep. According to the national sleep foundation's survey, more than half of all the adults experience at least one symptom of insomnia a few times a week .(4)

The diagnosis of insomnia is given whether the condition occurs as a comorbid condition to another mental or physical disorder such as depression or pain . (6)Depression is a psychiatric disorder which co-occurs with insomnia. General medication conditions including diabetes cardiopulmonary disease , musculoskeletal conditions, gastrointestinal disease , endocrine conditions, chronic renal failure and neurological disease . Substance use and abuse , including use / abuse of alcohol, tobacco, prescription medication such as pseudo ephedrine which are some factors that also co-occurs with insomniac conditions.(2)

It has been known for decades that chronic insomnia was associated with depression . (8)Jules angst, professor of clinical [psychiatry](#), observed the young citizens of his city, zurich for decades. The longer they were insomniac the more depressed they became. When insomnia became chronic, lasting ten years or more, depression's incidence became frequent, affecting a third or more.(4)

Some daytime consequences include fatigue ,lack of energy , daytime sleepiness , impaired concentration ,memory, social and disturbances in mood or motivation.(5)Sleep disorders occur frequently in patients with depression and sleep disorders is so frequent that some authors have suggested that in the absence of sleep complaints, a diagnosis of depression should be made with caution.(6) In fact insufficient or excessive sleep rhythm, are likely to occur during depression.

Nightmares are common parasomnia occurring in depression and frequently pertain the themes of masochism and poor self image. depressive symptoms are important risk factors for insomnia, in fact depression is considered to be an important comorbid condition in patients with chronic insomnia of any etiology, also taking into account that some drugs commonly prescribed for the treatment of depression may worsen insomnia and impair full recovery of illness(5).

It is apparent that sleep problems often appear before other depression symptoms,and that subjective sleep quality worsens before onset of an episode in recurrent depression.-Symptoms of disturbed night-time sleep in people with depression have been described extensively in both clinical and epidemiological studies. In clinical samples, difficulty in initiating or maintaining sleep (including earlymorning waking) or both have been reported in about three quarters of all depressed patients.(17)

When the authors looked at the value of sleep symptoms as a screening aid for depression, the proportion of participants with depression who reported symptoms of insomnia sufficient to warrant a diagnosis of insomnia (DSM-IV) was 41%, and the proportion without depression and without a diagnosis was 96%. (2)This supports the statement mentioned above that diagnosing depression without sleep complaints needs care.Insomnia is common, and tends to be a feature of atypical depression, and more prevalent in the young, with about 40% of patients under 30 and 10% of those in their 50s experiencing the symptom, and a higher incidence in females of all ages. Some patients experience both insomnia and hypersomnia during the same depressive episode. Agitation, restlessness and irritability,Dramatic change in appetite, often with weight gain or loss, Very difficult to concentrate, fatigue and lack of energy , feelings of hopelessness and helplessness, Feelings of worthlessness, self-hate and guilt, becoming withdrawn or isolated, Loss of interest or pleasure in activities that were once enjoyed, Thoughts of death or suicide all these types of depression leads to insomnia. As these types of depression creates an uncomfortable feeling in mind and leads the person to stay awake for a long time.(4)

The relationship between insomnia and depression is complex, and our knowledge has changed substantially in the past decade regarding the relationship between these two entities.(8) Earlier, an epidemiological study has shown that persons with insomnia are at a higher risk of developing depression and anxiety disorders. some of the studies are included in this review for the assessment of role of insomnia in depression.

Case study -1:-

Mr. Pratap , a 45-year-old man presents with difficulty falling asleep and staying asleep. The problem started after the death of his sister 2 months previously. He is unable to fall asleep until at least an hour after going to bed. He has no previous sleep problems. A general practitioner who consulted had prescribed low-dose dothiepin (tricyclic

antidepressant) as sedation but Mr. Tan was unable to tolerate the drowsiness and dry mouth caused by the medication. He consumes 4 cups of coffee during the day

And lately takes alcohol at night to aid sleep. The patient's wife has noted that his legs jerk occasionally during the sleep though Mr. Pratap is not aware of these movements. The most likely causes for Mr. Pratap's sleep problem are adjustment sleep disorder: this is insomnia related to depression, acute stress, conflict, or recent environmental change.(3)

Case study- 2:-

Depression plagued Steve since his diagnosis with diabetes. As noted earlier, his depression intensified after the deaths of his sister and father, but he did not descend into a suicidal mood until his wife died 10 years ago. Four years ago, he underwent electroconvulsive therapy (ECT), and although he continues to have occasional suicidal ideation, he has not made an attempt and has had no further psychiatric admissions. Both of his parents, his brother, and his sister suffered from depression. A maternal aunt suffered from dementia. His mother also struggled with alcohol abuse until her death from emphysema in 2004 at the age of 89. At the time of referral, he was taking fluoxetine, 40 mg, and venlafaxine, 37.5 mg, prescribed by a psychopharmacologist. Steve started treatment, he was interested in learning how to alleviate his depression and improve his diabetes care. He was pleasant, cooperative, thoughtful, and tactful, and his language was eloquent but often emotionless. He tended to give very detailed and pensive answers to questions. He also had faced being sleepless due to depression.

Careful clinical evaluation found that his insulin overdose was best explained by lack of attention rather than suicidal intent, desire for secondary gain, or fear of hyperglycemia. His eight previous severe hypoglycemic episodes raised the question of why this intelligent man kept repeating the same mistakes. His history hinted at troubles with complex cognitive functions (e.g., ability to plan, sequence, prioritize, organize, and initiate) that extended back to his college days. He reported that in the past year he had experienced more memory problems, sometimes forgetting names and having word-finding difficulties despite a sophisticated vocabulary base. He had also noticed increased short-term memory problems and a decline in attention span during the same period of time. Earlier in the year, an episode of extremity weakness and fatigue had led to neuroimaging studies that revealed no evidence of neurological injury or stroke. Certainly, depression, perhaps further complicated by ECT, aging, 3 decades of diabetes, and recurrent episodes of severe hypoglycemia, may have contributed to his cognitive decline. In fact, he reported feeling more depressed within the past 6 months. He was referred for neuropsychological testing to further understand his changes in cognitive function and target treatable symptoms, which was tested by Hamilton scale of depression.(15)

Case study -3 :-

Anna a 42 year old woman who is a single mother of three children. She couldn't tolerate her husband's sudden death. This depressed state led to insomnia and caused changes in her sleep/wake cycle. *Physical examination:* Anna's general physical evaluation found Anna to be healthy but suffering from excessive sleepiness, [fatigue](#), and a lack of energy. A concomitant psychiatric interview revealed high stress levels, which is mainly due to depression, anxiety, or other psychopathology. This physical examination was done by Hamilton rating scale for depression.(16)

Case study -4 :-

Puan Suraya, a 40 year old schoolteacher complains of inability to sleep well for more than 2 years. She regularly goes to bed at 10 pm but is unable to sleep until 1 am. She experiences about 3-5 awakenings every night and with each awakening requires about 30 minutes to fall asleep again. Suraya, also experiences daytime fatigue and is unable to concentrate in her work. She does not take naps during the day. She does not snore and has no usual limb movements. She does not snore and has no usual limb movements during sleep (history from husband). Her general health has been good. She vaguely recalls being involved in a stressful family property dispute just prior to onset of her sleep difficulty. Hence, the main reason for his sleeplessness is due to his depressed state of mind.(9)

Case study -5:-

A 65 year old man with Parkinson's disease and insomnia. Encik Hamzah, a 65-year old man with Parkinson's disease, complains of difficulty falling asleep, frequent nocturnal awakenings and non-refreshing sleep. He also experiences daytime fatigue and spontaneous dozing. He goes to bed at 11 pm, takes an hour to fall asleep and is awake by 5 am. He is unable to sleep thereafter. He is currently on levodopa and bromocriptine. He spends most of the day at home and does admit to feeling depressed.

Several factors can contribute to depression in patients with Parkinson's disease.⁸ Sleep disturbances tend to increase with age and is particularly common in Parkinson's disease. Difficulty falling asleep and difficulty remaining asleep are the most common complaints. Loss of dopaminergic neurons of the substantia nigra is responsible for most of the daytime features of Parkinson's disease. Other neurochemical changes affecting cholinergic, serotonergic and noradrenergic systems are also involved and have been implicated in the sleep-wake disturbances in Parkinson's disease. The precise role of these neurotransmitters in the disruption of the sleep-wake cycle is as yet unclear. As the sleep wake cycle is disturbed it leads the patient to be depressed.⁽¹²⁾

Discussion:-

Subjective and objective sleep disorders in depression are often distressing, stressful and unresolved by treatment. There is much evidence that effective antidepressant treatments can successfully elicit significant response in depression, but is much less evidence that effective treatment fully addresses the problem of sleep disturbance. Persistent insomnia is one of the most common residual symptoms in patients with incomplete remission. This presents a problem, given the fact that residual insomnia confers greater risk of subsequent depression: in a study of "remitted" patients maintained on a selective serotonin reuptake inhibitor (SSRI) and psychotherapy, subjective sleep problems and anxiety were each found to be predictors of early recurrence.⁽⁶⁾

The origin of these residual symptoms of insomnia is probably multifactorial, reflecting ongoing functional brain abnormalities as well as adverse effects of some drug treatments, for example SSRIs, particularly fluoxetine, can lead to insomnia. It indicates significant alterations in brain neurotransmitter function, as well as leading to significant impairments in quality of life and further treatment-seeking by sufferers, so increasing the burden on health care services. There is therefore a need for more successful management of sleep disturbance in depression, in order to improve quality of life in these patients and reduce an important factor in depressive relapse and recurrence. Sleep disturbances may act as risk factors for or predictors of depression. A prominent symptom of all types of depression includes insomnia. In some cases, insomnia can worsen already existing depressive symptoms.⁽⁵⁾ So, whether we think of insomnia as a precursor to depression, a symptom of depression, or a side effect of depression or its treatment, the efficacy of treatment methods depends upon remission of insomnia. Hence, the role of insomnia in case of depression is mainly due to the neurologic and psychiatric problems in neurotransmitter like acetyl choline, dopamine present in neurons.

Physiological changes in sleep related to depression correlate with the likelihood of response to psychotherapy alone and may also identify which patients are unlikely to do well with psychosocial treatment and, therefore, to need somatic therapy in order to preserve recovery. Electroencephalographic (EEG) sleep changes also correlate with the speed of response and with the brittleness or durability of response (i.e. probability of relapse or recurrence).⁽⁶⁾

These observations suggest a close relationship between the regulation of sleep and the regulation of mood. The importance of this relationship is further underscored by recent brain imaging studies of sleep and sleep deprivation in patients with major depression⁽²⁾.

In conclusion, primary insomnias are frequent during depressive disorders. They usually follow depressive symptoms. On the other hand, secondary insomnia often precede depressive illness. If insomnia remains untreated for a long time, it can lengthen the depressive illness as well as the current depressive episode and increases frequency of depressive disorders.⁽⁷⁾

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