

INTRODUCTION

Sleep is the intermediate state between wakefulness & death, wakeful being regarded as the active state of all the animals and intellectual functions, and death as that of their total suspension (1).

Interest in sleep and dreams has existed since the dawn of history. Some of the world greatest thinkers, such as Aristotle, Hippocrates, Freud and Pavlov have attempted to explain the physiological and psychological basis of sleep which has been reviewed by others (2). Sleep disorders are ubiquitous and manifestations are protean. Although sleep disorders related to sleep are not new, yet the discipline of sleep disorders medicine is in its infancy. Reasons are many, as the vast majority of medical schools simply do not teach much about sleep in their curricula, in either the basic science studies or later in clinical years. Moreover much of the research work in the field of sleep medicine has been conducted in animals hence very few data are available from humans. However, last past 10 years has been monumental one in the field of sleep medicine. In USA, by 1990, National Institute of Health has been established. The task force of American sleep disorder association has published international classification of sleep disorders, which has been accepted by world medical community (3).

There is gradual expansion and availability of diagnostic and therapeutic services for patients with sleep disorders throughout world. Some of the developed countries like Australia and UK in particular; cases are dealt either by pulmonologist, neurophysician, ENT specialist or dentist if surgical intervention is needed. Research work is suffering, as there is no separate discipline of sleep medicine yet, even in developed countries. The growth of sleep medicine in India has been very slow, only few institute in Delhi or Mumbai has established sleep labs but no serious research work is undertaken to generate epidemiological data in context of Indian population , diagnostic methodology or management of sleep related disorders and sleep apnoea syndromes in particular.

One of the most important event in the history of sleep disorders medicine occurred in 1965 when sleep apnoea was discovered independently by Gastaut, Tassinari and Duron in France and Jung and Kuhlo in Germany. Sleep apnoea syndrome is classified as central, obstructive or mixed. The syndrome of obstructive sleep apnoea (OSA) is the commonest. It has enormous public health importance.

Accident at work or automobile accidents or decreased marital satisfaction are not uncommon in patients with obstructive sleep apneas. These patients are at increased risk for diurnal hypertension, myocardial infarction, ventricular failure, pulmonary hypertension, cardiac dysrhythmias, strokes and sudden cardiac deaths during sleep (4). The exact pathophysiology of Obstructive sleep apnoea is not well understood however certain factors are attributed in its pathogenesis of like age, sex, obesity, genetic factors, and reduced upper airway caliber. Upper airway muscle dysfunction, upper airway reflexes, mechanical factors, impaired arousal responses, central factors and certain drugs (5).

Surgical patients with obstructive sleep apnoea need special consideration peri-operatively to avoid likely cardio respiratory complications as reported in the literature (6). There has been furious debate on the use of opioids in these patients. Respiratory depression, coma, even death can occur peri-operatively in these patients if morphine in particular is used as either premedicant or post operative analgesic. These observations are based on few case reports and there is no scientific study available to prove that opioids are as deleterious as projected. It is usually forgotten that the effects of morphine in patients with pain and those without pain as in preoperative period are quite different. For that matter obese patients with difficult airway anatomy even without obstructive sleep apnoea if subjected to narcotics will have aggravated cardio respiratory complications. There are no studies, which show direct evidence on the effects of opioids analgesics on upper airway muscles. A study by Catley has shown that in healthy adults opioids preferentially depress upper airway muscle activity in a way similar to that of effect of sleep (7). Robinson and his co-investigators demonstrated a lack of selective depression of Upper airway muscle function by small doses of oral opioids administered to healthy adults (8). Therefore there is need for a scientific study to evaluate the effects of opioids, as premedicants in surgical patients suffering from obstructive sleep apnoea. Similarly there are problems in diagnosing patients with obstructive sleep apnoea. American Sleep Disorder Association (ASDA) has recommended four levels of monitoring equipment.

Level I: Standard PSG with minimum of seven parameters including EEG, EOG, chin EMG, ECG, airflow, respiratory efforts, oxygen saturation, body position and leg movements by EMG A trained personnel is in the constant attendance during the procedure.

Level II: (Comprehensive PSG) Minimum of seven parameters body position may be measured , leg movements optional personnel may or may not be in attendance.

Level III: (Modified portable sleep apnoea testing) Minimum of four parameters, at least two channels of respiratory movements and airflow, heart rate by ECG, oxygen saturation. Body position and leg movements are optional. Personnel are not in attendance.

Level IV: Minimum of one parameter recorded. No body position or leg movements recorded. No personnel in attendance.. Level IV diagnostic method obviously under diagnose some of the cases hence we need a modified clinical model suitable to our set of patients where sensitivity and specificity should be high so that only few cases are missed. Many clinical models have been recommended but those models cannot be in applied in our patients due to racial bias, different body frame and physiological reserves. Moreover any clinical model cannot replace night polysomnography which is the gold standard to diagnose the obstructive sleep apnoea.