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DESCRIBE THE CLINICAL CHARACTERISTICS OF POLYSOMNOGRAPHY DURING APNEA IN IRAQI PATIENTS

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Abstract
This paper aims to Describe the clinical characteristics of polysomnography during apnea in Iraqi patients. Sixty patients were collected from different hospitals in Baghdad, Iraq, where improvements in patients who completed a period of 6 months, 12 months were read.
The 60 patients were divided according to gender, which included 45 male patients and 15 female patients. The study was divided on the basis of the original group
Being overweight is a major health risk and a risk factor for all-cause death, as well as cardiovascular disease and cancer, for both men and women of all age groups.
And in results, we have identified a relationship between the level of visceral adipose tissue measured by computed tomography and the presence of OSA in obese patients. Their data indicate that accumulation of visceral adipose tissue is an important risk factor for the development of OSA in obese patients and found a statistical relationship in results of study equal to 0.001

Keywords: OSA, BMI, ENT, apnea, obese.

INTRODUCTION

(OSA) is a life-threatening respiratory disorder defined as a period of asphyxiation during sleep and leading to the development of excessive daytime sleepiness, circulatory disturbances, and cardiac instability [1,2].
Sleep apnea syndrome has a multifactorial negative effect on the state of the nervous, cardiovascular, respiratory, and other body systems. Most patients suffer from obesity, hypertension, coronary heart disease, and compensatory changes in the blood system. Sometimes there can be up to 300-400

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episodes of apnea each night for a total duration of up to 3-4 hours, which leads to persistent lack of oxygen during the night and significantly increases the risk of developing a severe heart: arrhythmia, myocardial infarction, stroke, and even sudden death during sleep [3,4,5].

Among the clinical manifestations of OSAS, snoring is detected most often, up to 100% of cases [6]. However, there are some reports that snoring is not always detected, especially in people of normal weight [7]. Snoring often occurs while sleeping in the supine position, which is associated with the possibility of additional obstruction of the upper airways (URT).

The frequency of snoring may vary depending on the level of obstruction and the presence of OSA, the latter being 1–3 kHz. Usually, the sound frequency is 50-60 Hz [43].

The snoring of patients with OSAS is characterized by the surrounding environment being loud, with interruptions greater than 10 seconds (depending on the sleep phase, in men, on average, 20.1-29.8 seconds, in women, 16.7-26.6 seconds [8] with Maintain chest and abdominal flu, and after rest periods the intensity of snoring increases sharply and irregular limb movements are noted.

Snoring itself is often not observed by the patient, however, disturbed and unrefreshing sleep occurs in 40% of OSA patients [9,10,11]. Patients often complain of dry mouth in the morning due to open mouth breathing, nocturnal enuresis and nocturia, and night sweats (66%) [12,13,14,15].

The next clinical manifestation is excessive daytime sleepiness. It is observed in 76-90% of patients [18], and women suffer more than men [16,17]. Daytime sleepiness affects the quality of life of patients with OSAS to a lesser extent [19]. The degree of daytime sleepiness is directly proportional to the AHI [20].

Patients with OSA have increased irritability, anxiety, and a tendency to depression. A study [21] showed a decrease in attention and intellectual abilities in patients with obstructive sleep apnea. A case of manifestation of OSAS with acute delirium has been described [22].

Sleep studies show a decrease in phases 3 and 4 (deep sleep) and a corresponding increase in phases 1 and 2 (light sleep). Duration of wakefulness during sleep, physical activity, and number of awakenings are also increased. Interestingly, sleep time is reduced by three times compared to healthy individuals. The relationship between the number of apnea episodes and the severity of the listed changes was observed [23,24,25].

Material and Method

Patient sample

Sixty patients were collected from different hospitals in Baghdad, Iraq, where improvements in patients who completed a period of 6 months, 12 months were read.

Study Design

The 60 patients were divided according to gender, which included 45 male patients and 15 female patients. The study was divided on the basis of the original group.

The polysomnography Outcome Measures for Participants Completed Polysomnogram at six months and 12 months, then a comparison was made between the two groups

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The diagnosis of OSA is based, first of all, on a characteristic clinical picture - the presence of snoring, excessive daytime sleepiness, and obesity. However, these symptoms are not always associated with the presence of OSA; for example, there is evidence that severe obesity has symptoms characteristic of OSA (snoring, daytime sleepiness) without OSAS [69], etc., which should be considered when Make a diagnosis.

Obstructive sleep apnea may be suspected in a patient if there are three or more signs listed below: indications of respiratory arrest; Indications of loud or intermittent snoring; increased daytime sleepiness; frequent urination at night; prolonged nocturnal sleep disturbance (>6 months); arterial hypertension (especially at night and in the morning); obesity

If on the basis of the data obtained, it is possible to assume the presence of OSA, then a polysomnography study is carried out, which involves recording the following parameters during the entire period of sleep: electroencephalogram, electrocardiogram, myotogram, myogram of tibial muscles Front leg, nasal flow, thoracic and abdominal breathing movements, patient posture, blood saturation and heart rate, ECG, snoring.

There are three levels of severity for sleep apnea: mild, moderate, and severe.

Mild degree is characterized by drowsiness during activities that practically do not require concentration: watching television, reading. This degree of symptom severity does not result from apparent social maladaptation. With polysomnography, the apnea index (AI) is 5-9, AHI 10-19

Study Period

The study period extended for two years and included the collection of information and demographic data on patients for a period of 6 months and 12 months, and the study period extended from 10-3-2019 to 11-2-2021

Aim of Research

This paper aims to Describe the clinical characteristics of polysomnography during apnea in Iraqi patients.

Results

Table 1- results of Baseline

Base line G	N	P%	CHI square
45-49	7	11.6	4.31
50-54	15	25	
55-59	20	33.33	
60-65	18	30	
BMI kg/m2	M	SD	CHI square
25-27	20	33.3	3.39
28-30	20	33.3	
31-33	20	33.3	
Apnea-hypopnea index, events/h	M	SD	CHI-SQUARE
index	34.6	12.3	3.32

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Table 2- results of patient Completed 6-month (58) patient

Base line G	N	P%	CHI square
45-49	7	12.06	4.31
50-54	15	25.86	
55-59	20	34.48	
60-65	16	27.58	
BMI kg/m2	N	P	CHI square
25-27	20	33.3	3.39
28-30	19	33.3	
31-33	19	33.3	
Apnea-hypopnea index, events/h	M	SD	CHI-SQUARE
index	32.1	10.9	3.32

Table 3- results of patient Completed 12month 55 patient

Base line G	N	P%	CHI square
45-49	7	12.7	4.31
50-54	15	27.2	
55-59	19	34.54	
60-65	14	25.4	
BMI kg/m2	N	P	CHI square
25-27	18	32.7	3.39
28-30	18	32.7	
31-33	19	34.5	
Apnea-hypopnea index, events/h	M	SD	CHI-SQUARE
index	31.2	9.9	3.55

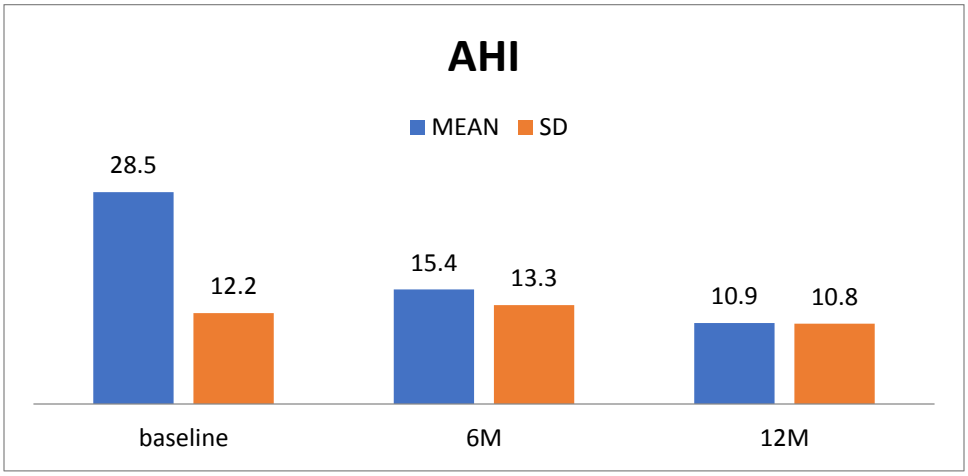

Figure 1- Results of AHI

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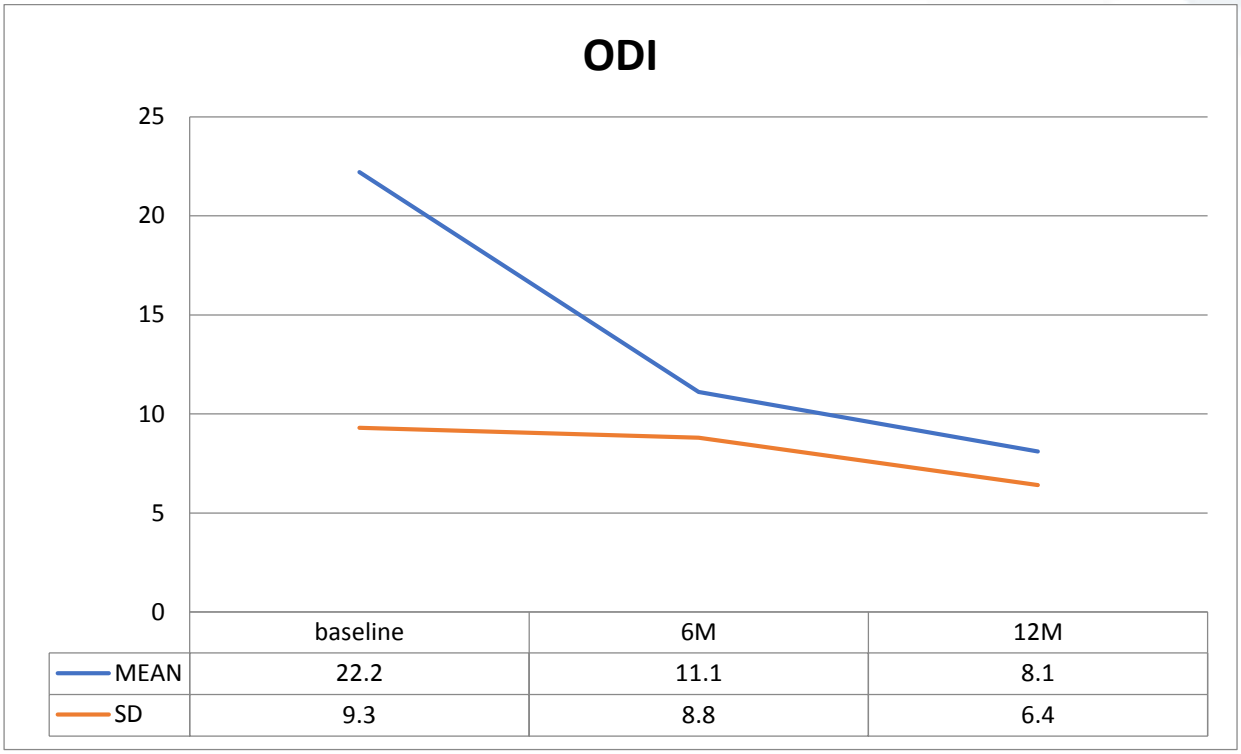

Figure 2-results of ODI

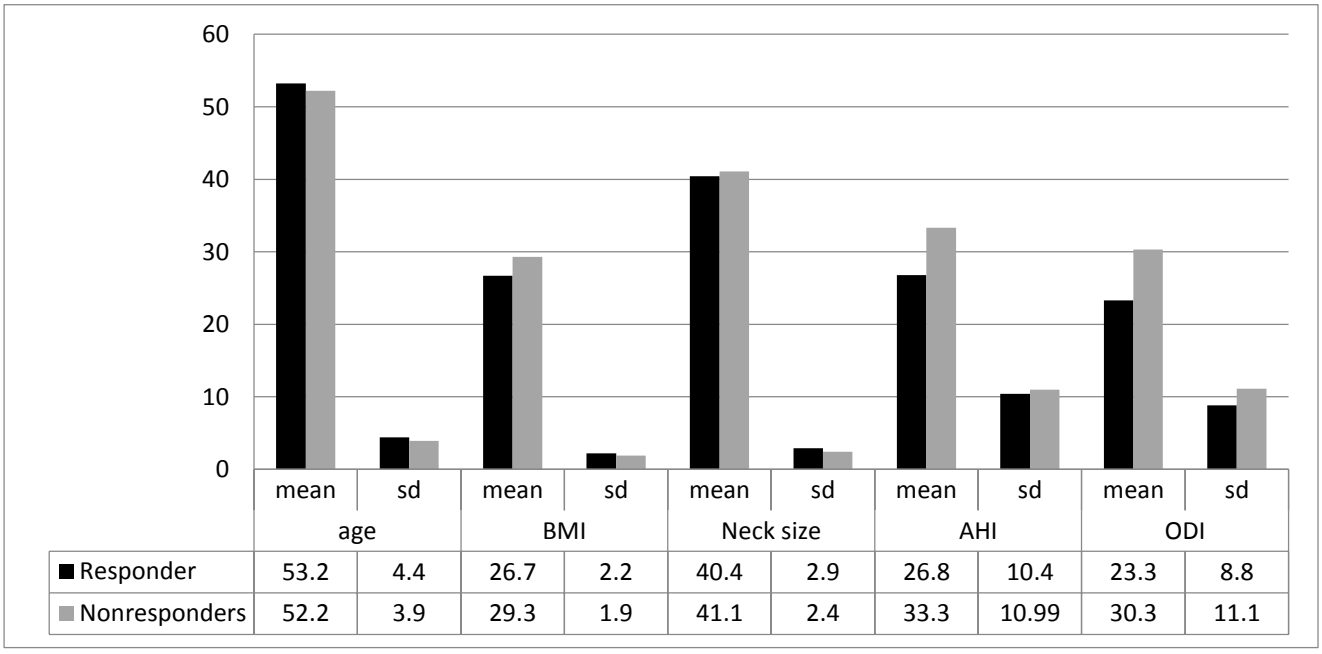

Figure 3-distribution of patient which completed 12 m according to Responder and Nonresponders

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Table 4- result of patient according to Sleep Questionnaire

	p	Responders	Nonresponders
Functional Outcomes of Sleep Questionnaire	12 m	11.5±4.4	17.1±1.7
Epworth Sleepiness Scale	12 m	10.9±3.9	11.1±3.8

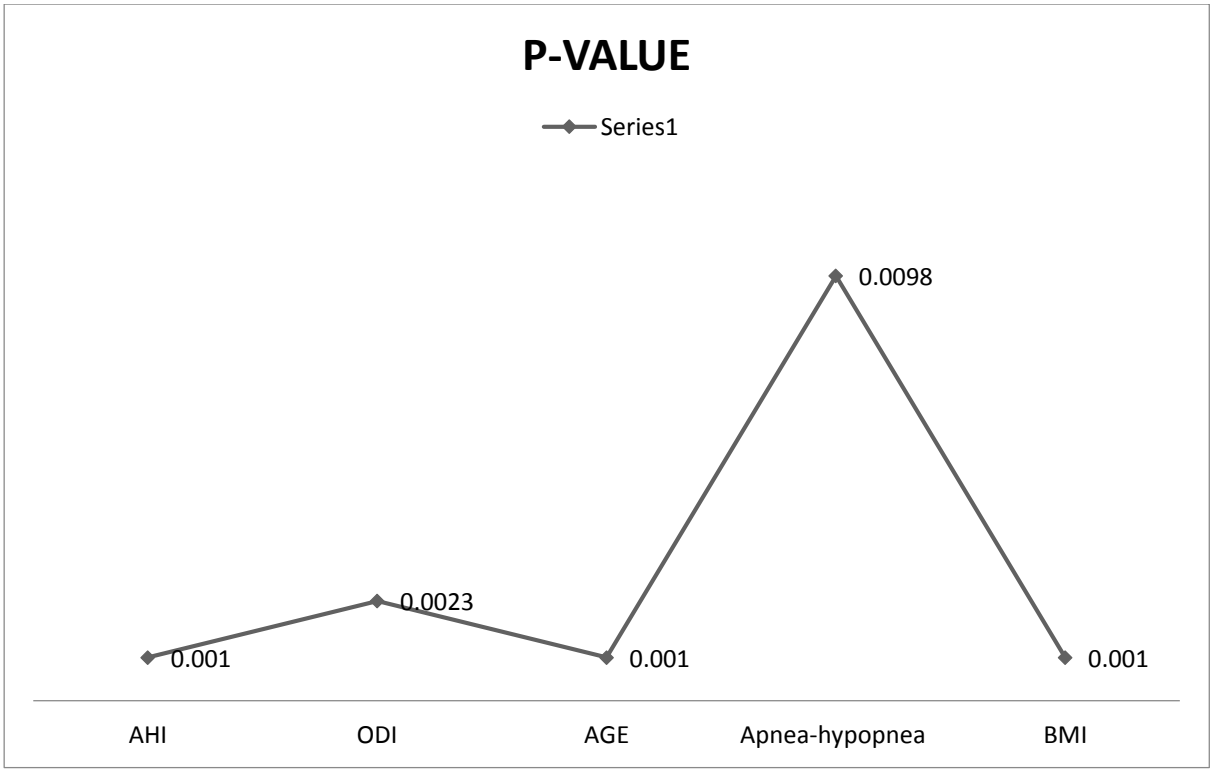

Figure 4- p-value result of study

Table 5- p-value between Nonresponders and Responders

Functional Outcomes of Sleep Questionnaire	0.04
Epworth Sleepiness Scale	0.39
AGE	0.46
BMI	0.87
NS	0.32
AHI	0.22
ODI	0.39

Discussion

Patients were divided according to completed 12 m,6 m according to Responder and Nonresponder. Where we note that the ages of patients were classified into four categories, and the ages ranged from

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45 to 65 years, and the same was the case with regard to body mass index. Patients were also distributed based on body mass index, and we note results of patients completed six months .Two patients died, and the patients decreased 58, and the CHI square rate to the age of the patients was 4.31. As for the Apnea-hypopnea index, events/h it was 32.1 +10.9 where a decrease was found in the Apnea-hypopnea index, events/h in the group of patients that completed 12 months.

Being overweight is a major health risk and a risk factor for all-cause death, as well as cardiovascular disease and cancer, for both men and women of all age groups.

The combination of central obesity with disorders of carbohydrate and lipid metabolism and hypertension is isolated as an independent syndrome. This syndrome is known in the literature as "metabolic syndrome."

The significance of metabolic syndrome is determined by its association with cardiovascular disease.

Japanese researchers have identified a relationship between the level of visceral adipose tissue measured by computed tomography and the presence of OSA in obese patients. Their data indicate that accumulation of visceral adipose tissue is an important risk factor for the development of OSA in obese patients.

Similar results were obtained by r gauden and found that patients with obstructive sleep apnea had significantly more visceral adipose tissue compared to obese patients without OSA, and AHI was positively correlated with visceral fat rather than BMI. In addition, the biochemical data supported a higher degree of insulin resistance in patients with obstructive sleep apnea. The researchers suggested that there is a strong, independent association between OSA and visceral obesity and insulin resistance.

Obesity is the main risk factor for OSA, and it occurs in 50% of obese people.

There is evidence that non-obese OSA patients have excessive fat deposition, especially in the upper respiratory tract, compared to non-obese patients.

Data showed a high prevalence of insulin resistance in patients with OSA. Similarly, an association was found between central obesity and OSA. Strohl et al. showed an association between hyperinsulinemia and AHI independent of BMI in 386 subjects who underwent polysomnography. Previously, two relatively large studies demonstrated an association between OSA severity and insulin resistance that was independent of BMI.

Conclusion

Obstructive sleep apnea is caused by closure of the upper respiratory tract as a result of decreased tone of the laryngeal muscles or other diseases of the ENT organs, often accompanied by snoring.

With central apnea, the main role is played by disruption of the respiratory center, which is a consequence of violations of the processes of nervous regulation.

Sleep apnea can be obstructive or central. Obstructive sleep apnea is caused by a blockage in the larynx or upper airways. Central sleep apnea is associated with a dysfunction in the part of the brain that controls breathing. Sometimes in obstructive sleep apnea, the combination of a prolonged decrease in oxygen levels and an increase in carbon dioxide in the blood reduces the brain's sensitivity to these disturbances - and as a result, the obstructive sleep apnea is exacerbated by central sleep apnea.

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Recommendation

1. For people with obstructive sleep apnea, the first steps in treatment should be quitting smoking, reducing alcohol intake, and losing weight. With severe snoring and frequent suffocation in a dream, sedatives, sleeping pills, and other sedatives should not be taken. In addition, it is important to change the position of the body during sleep: people who snore heavily are advised to sleep on their side or on their stomach.
2. If these simple measures don't eliminate the sleep apnea, a device, a CPAP machine, that moves oxygen-rich air through the nose and creates a constant positive pressure in the airways can be used.

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