



A SURVEY BASED STUDIES DONE ON CARDIOLOGY PATIENTS BASED ON STOP BANG QUESTIONNAIRE FOR OBSTRUCTIVE SLEEP APNEA

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Article Received on 17/09/2018

Article Revised on 08/10/2018

Article Accepted on 29/10/2018

ABSTRACT

Obstructive sleep apnea (OSA) is a major risk factor for perioperative adverse events. This study was conducted to develop and validate a concise and easy-to-use questionnaire for OSA screening in surgical patients. The four questions were respectively related to snoring, tiredness during daytime, observed apnea, and high blood pressure (STOP). For validation, the score from the STOP questionnaire was evaluated. The STOP-Bang model may be useful to categorize OSA severity, triage patients for diagnostic evaluation or exclude from harm. This study revealed that Obstructive sleep apnoe are more prevalent in Male than Female. Obstructive sleep apnea is increasing in prevalence and significantly increases cardiovascular morbidity and mortality by increasing sympathetic tone, inflammatory mediators, and cardiac stress.

KEYWORDS: Apnoea, Blood pressure, BMI, Sleepy, OSA and their risk.

INTRODUCTION

Obstructive sleep apnea (OSA) is strongly correlated with cardiovascular disorders. OSA leads to desaturations, arousals, and wide swings in intrathoracic pressure during apneic episodes, resulting in increased sympathetic tone in patients with OSA. The Stop portion of the questionnaire consists of four yes/no self-answer questions assessing snoring, tiredness, observed apneas, and high blood pressure. The BANG portion of the questionnaire adds clinically observed quantities, again with yes/no answers, including BMI > 35 kg/m², age >50 years, neck circumference >40 cm, and male gender. The study has been validated and demonstrates high sensitivity with moderate specificity.^[1]

Apnea refers to a pause in respiration for more than 10 seconds and is seen in both central sleep apnea (CSA) and obstructive sleep apnea (OSA). In OSAHS, there is repetitive collapse of the upper airway, which may be either partial or total resulting in hypopnea or apnea, respectively; during sleep, it occurs more than five times per hour.^[2,3,4]

Pathophysiology

Apnea and hypopnea are caused by the airway being sucked close on inspiration during sleep. This occurs as the upper airway dilating muscles, which are also striated muscles, normally relax during sleep. In patients with OSAHS, the dilating muscles can no longer successfully oppose negative pressure within the airway during inspiration^[5] The patients have narrow upper airways. The airway is kept patent by the dilating muscles which have higher than normal activity during wakefulness. But during sleep, the muscle tone falls and airway narrows^[5,6,7] Snoring may then occur; followed by airway occlusion and subsequent apnea.

The differential diagnoses of OSAHS include the following

- 1)Insufficient sleep:** A good history taking can always reveal this diagnosis.
- 2)Shift work:** This is a major cause of sleepiness in workers either on rotating shift or with night work patterns.
- 3)Psychological conditions:** Depression is a major cause of sleepiness.

4)Drugs: This is common with sedatives and stimulant drugs.

5)Narcolepsy: Is much less common than OSAHS and usually commences from childhood. Idiopathic hypersomnolence: This is a term used to define long duration of sleep and sleepiness^[8]

Questionnaires

The STOP-Bang questionnaire requires yes/no responses to 8. For this study, responses to the STOP questionnaire were derived from equivalent questions included in a comprehensive sleep questionnaire obtained on all patients. Demographic data and anthropometric measurements (Bang) were obtained at the same time. The use of equivalent questions was validated by prospectively administering the STOP questionnaire.

RESULT

Age Categorization of the participants

The following number of patients belonging to the respective age groups have participated in the study

- 1)21-30 years- 4male,4female
- 2)31-40 years- 2female, 3 male
- 3)41-50 years- 5female, 7 male
- 4)51-60 years-7female, 10male
- 5)61-70 years-3female, 2 male
- 6)71-80years - 0female,5male

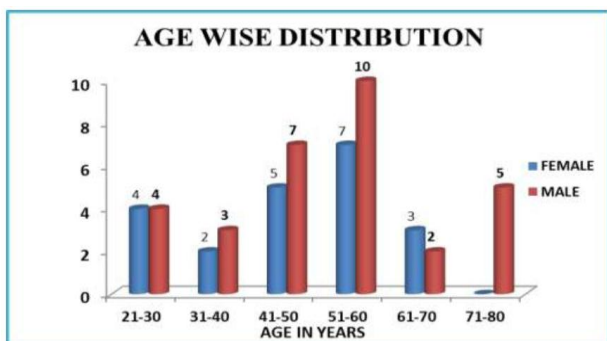


Figure 1: Age Wise Distribution.

Gender wise distribution: Among the subjects 40.3% females and 59.60% of males were found.

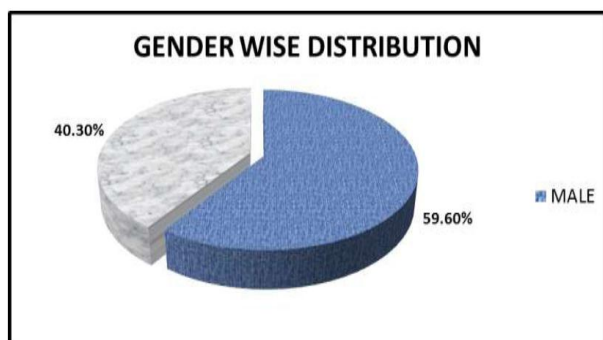


Figure 2: Gender Wise Distribution.

Stop Scale: Among the subjects the scale of snoring male is 12, Tiredness is 12, Observed apnoea is 5, and

Blood pressure is 18. Whereas in females the snoring scale is 6, Tiredness is 11, Observed apnoea is 0, and Blood pressure 9 were found.

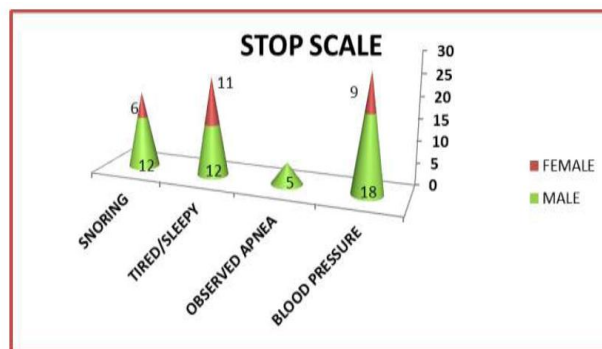


Figure 3: Stop Scale.

Bang Scale

Among the 59.6% of males, the percentage of BMI is 4.3, Age>50 years were 2.5 and neck circumference >40cm were 3.5; whereas among the 40.30% of females, the percentage of BMI is 2.4, Age>50 years were 4.4 and neck circumference >40cm were 1.8; were found.

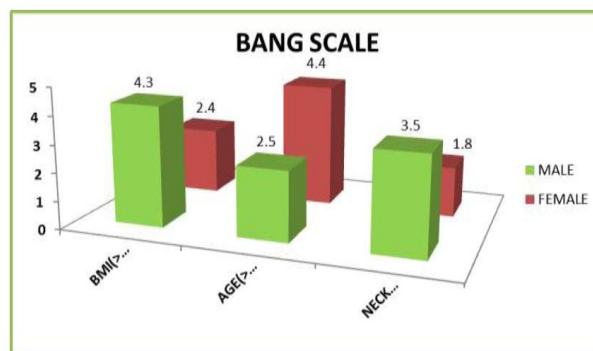


Figure 4: Bang Scale.

Stop-Bang Scale: Among the total number of patients the scale of STOP-BANG was found to be:

- 1)BMI: 2
- 2)Observed Apnoea: 5
- 3)Snoring: 18
- 4)Tired/Sleepy: 23
- 5)Blood Pressure: 27
- 6)Neck Circumference: 31

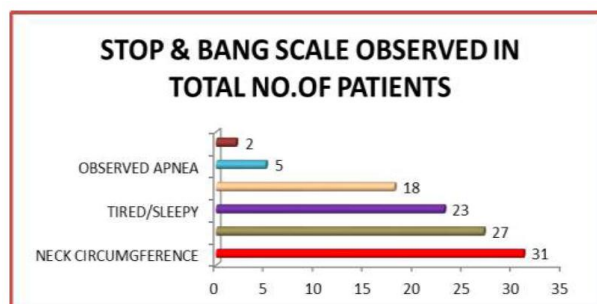


Figure 5: Stop & Bang Scale Observed In Total No of Patients.

Total Score risk in Gender wise

| Risk | Male | Female |
|-------------------|------|--------|
| High Risk | 13 | 1 |
| Intermediate risk | 17 | 7 |
| Low risk | 1 | 11 |

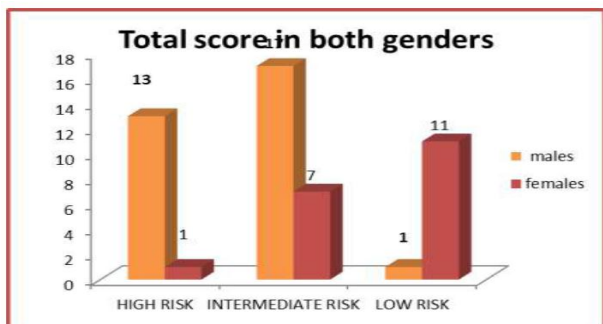


Figure 6: Total score in both genders.

Total Score risk in both genders

Among 50 subjects the high risk was found in 14 subjects, Intermediate risk is found in 24 subjects and low risk is found in 14 subjects respectively.

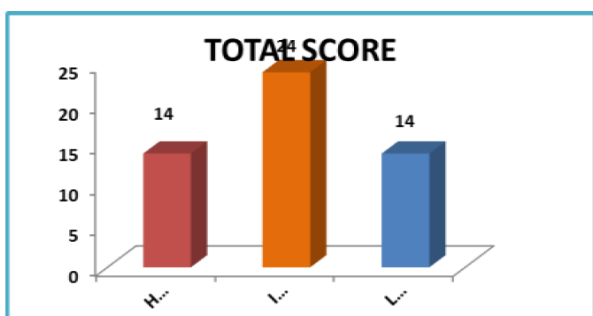


Figure 7: Total score.

Statistical Analysis

The data collection form designed for use in the study was computerized using Microsoft Access 2007 for easy accessibility, retrieval and analysis of collected data. Results were analysed.

DISCUSSION

The current clinical research study conducted at KIMS, Secunderabad in 50 subjects with cardiovascular diseases was meant to study Obstructive Sleep Apnoea. The Inclusion and Exclusion criteria were mentioned. The clinical findings clearly establish relationship between obesity, BMI, Apnoea, Tiredness, Snoring and Blood pressure. The current research work reveals that Obstructive sleep apnoea are more prevalent in male than female and the classification of risk for obstructive sleep apnoea i.e., High risk, Intermediate risk and Low risk were also seen to be more prevalent in Male than Female.

CONCLUSION

The present study reveals that Obstructive sleep apnoea are more prevalent in Male than Female. Obstructive

sleep apnea is increasing in prevalence and significantly increases cardiovascular morbidity and mortality by increasing sympathetic tone, inflammatory mediators, and cardiac stress. Treating sleep apnea improves cardiac function and reduces complications related to hypertension, congestive heart failure, and atherosclerosis.

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