

ASYMPTOMATIC HYPERTENSION AMONG IT PROFESSIONALS AND ITS ASSOCIATION WITH KNOWN RISK FACTORS IN KOLKATA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Hypertension remains silent, being generally asymptomatic during its clinical course. As it is hidden beneath an outwardly asymptomatic appearance, the disease does immense harm to the body in the form of 'Target Organ' damage; hence, the WHO has named it the 'Silent Killer'. In our country, prevalence of hypertension has been estimated to be between 20% to 40% in urban adults which is likely to expand to 200 million by 2025, with equal numbers among men and women. Job related psychosocial stress and sedentary life styles may directly and indirectly contribute to development of hypertension among the IT professionals.

Aims & Objective: To find out the association of the risk factors among per chance detected hypertensive of IT professionals of an IT company.

Material and Methods: This cross sectional study was undertaken after getting informed verbal consent from 91 professionals of a IT company a predesigned self-employed questionnaire regarding demographic and lifestyle information were taken. Blood pressure was measured by using the standardized sphygmomanometer. All the participants were requested to take rest for ten minutes. Blood pressure was measured in the sitting posture with two separate readings were taken at an interval of minimum five minutes. The average of the two readings was taken and JNC VII classification was followed.

Results: Among 91 IT professionals 14 were recorded to be detected per chance hypertensive. Of the known risk factors age (OR= 1.322; p=.001), Basal metabolic index (BMI) (OR=1.589; p=.000), smoking habit (OR=9.931; p= .004) were significantly associated with hypertension. Pack years of smoking and duration of alcohol consumption were also to be significantly associated with hypertension.

Conclusion: As among the significant risk factors four are modifiable more emphasis to be given on life-style modification and periodically blood pressure check-up should be initiated to detect hypertension early.

KEY-WORDS: Asymptomatic; Hypertension; Logistic Regression; IT Professionals

Introduction

Computers have become an epitome of modern life, being used in every aspect of life from calculating grocery bills, telecommunication, banking operation and name any sphere and one will find computer. With the use of Internet Technology distances carry little meaning and information anywhere is accessible with just click of a mouse. India has been in the forefront of Cyber World with IT industry developing in a major service provider. It was estimated that in 1990 s there were approximately 6 computers / 1000 population with an installation of 18 million personal computers (PCs) and their number increasing all the time.^[1] The primary service providers in Information Technology industry are

grouped into IT software industry, IT enabled services , internet and e commerce. There are approximately 916 IT provider registered with National Association of Software and Service Companies (NASSCOM) all over India.^[2] This has also ushered a new genera of Occupational Health problem. India being the forerunner in the cyber world, these IT personnel is slowly awakening to the group of modern occupational disease which are slowly taking its roots among them. The daily experience is of repetitive, intensive and stressful work, which frequently results in employee "burnout". Sedentary activity and unhealthy lifestyle with high prevalence of alcohol consumption and smoking all these lead to risk of development of non-communicable disease including Hypertension. Bulks of literatures are

available on this problem in the West with a few in Indian set up. The Present study is aimed at exploring the magnitude of Asymptomatic Hypertension and its association with known risk factors among IT professionals.

Materials and Methods

This cross sectional study was undertaken after getting informed verbal consent from 91 professionals of an IT company. A predesigned questionnaire regarding demographic and lifestyle information were taken. They were interviewed separately in a room. They were explained the purpose of the study and assured about the confidentiality of shared information. Blood pressure was measured by using the standardized sphygmomanometer. All the participants were requested to take rest for ten minutes. Blood pressure was measured in the sitting posture with two separate readings were taken at an interval of minimum five minutes. The average of the two readings was taken and JNC VII classification was followed.^[3] Weight was measured to the nearest 0.1 Kg and weighing machine was used for weight measurement. Height was measured against a non-stretchable tape fixed to a vertical wall, with the participant standing on a firm/level surface and it was measured to the nearest 0.5 cm. Statistical analyses were performed with SPSS PC Windows version 16.0. We had done uni-variate and multi-variate logistic regression to assess the predictors.

Results

The present study included 91 IT professionals. All are form a call centre. Mean age of the study subjects was 27.6 ± 4.04 years. Table 1 shows that among them 14 (15.38%) were recorded to be detected per chance hypertensive. By doing uni-variate analysis among the known risk factors age, Body mass Index (BMI) and smoking habit were significantly associated with hypertension. Though alcohol consumption was found to be a risk factor and exercise was found to be a protective factor of development of hypertension, both of the factors were found to be statistically non-significant (p>.05) (Table 2).

Table-1: Pattern and Distribution of Hypertension according to Age and Sex (n=91)

Age	Male		Female		Total	
	Total	HT	Total	HT	Total	HT
21 – 25	16	0 (0)	9	0 (0)	25	0 (0)
26 – 30	40	6 (15)	10	1 (10)	50	7 (14)
31 – 35	10	1 (10)	2	1 (50)	12	2 (17)
36 – 40	2	2 (100)	1	0 (0)	3	2 (67)
41 – 45	1	1 (100)	0	0 (0)	1	1 (100)
Total	69	10 (14)	22	2 (9)	91	14 (15)

HT: Hypertension

Table-2: Predictive Factors of Hypertension (Univariate Analysis)

Risk Factors	Odds Ratio	CI (95%)	P value
Age	1.322	1.117-1.563	0.001*
Sex	2.105	0.433-10.234	0.356
Marital Status	2.348	0.739-7.458	0.148
BMI	1.589	1.238-2.039	0.000*
Smoking (Y)	9.931	2.074-47.559	0.004*
Alcohol (Y)	1.139	0.356-3.558	0.823
Exercise (Y)	0.894	0.225-3.558	0.874
Computer use	0.942	0.759-1.169	0.586

* Statistically significant; CI: Confidence Interval

Table-3: Risk Factors of Hypertension (Multivariate Analysis)

Risk Factors	Odds Ratio	CI (95%)	P value
Age	1.298	1.012-1.664	0.04*
BMI	1.614	1.166-2.232	0.004*
Smoking (Y)	17.633	2.489-124.916	0.004*

* Statistically significant; CI: Confidence Interval

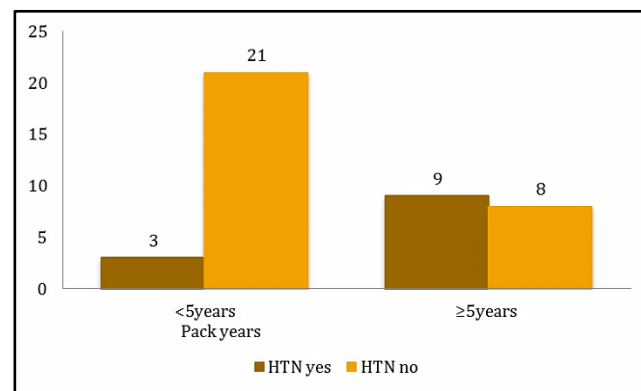


Figure-1: Dose-Response Relationship of Smoking & Hypertension (n=41) [OR = 7.875 (1.689- 36.720); p value = 0.009]

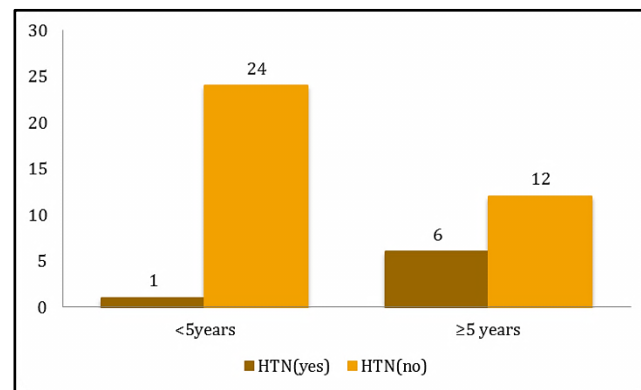


Figure-2: Relationship of Alcohol Duration & Hypertension (n=43) [OR = 12 (1.29-111.32); p value = 0.03]

Among the factors which were found to be statistically significant risk factors of hypertension in uni-variate analysis age, BMI and smoking were found significant risk factors in multi-variate analysis (Table 3). Pack year of smoking and duration of alcohol were found to be significantly associated with hypertension (Figure 1 & 2).

Discussion

Symptoms and health problems caused or aggravated by work are common.^[4] In emerging occupations such as off shoring which is just the tip of the iceberg in how globalization can transform industries.^[5] For preliminary and rapid assessments of health hazards self-reported stress and ill health can provide "quick and dirty" data on the basis of which more refined studies can be planned. Occupational burnout is characterized by impaired sleep suggested that impaired sleep may play a role in the development of exhaustion in burnout.^[6] Burnout patients may show pronounced sleepiness and mental fatigue at most times of the day for weekdays without reduction during weekends. Drake et al demonstrated that individuals with shift work sleep disorder are at risk for significant behavioral and health related morbidity.^[7] They further suggested that prevalence of shift work sleep disorder is approximately 10% of the night and rotating shift work population. 15.38% of the respondents in the present study detected Hypertension. Most people experience regular shifts in alertness, mood and energy throughout the day. Many of such fluctuations occur over the course of a single day and are therefore known as circadian rhythms. Research findings indicate that such shifts are related to changes in underlying bodily processes.^[8] In occupations such as BPO industry where individuals must work at times when they would normally be sleeping this biological clock may be deranged. The resetting of the biological clock is draining, both physically and psychologically.^[8] These effects, in turn, have been linked to poorer on-the-job performance, increased industrial and traffic accidents, and adverse effects on health.^[9] In view of these findings, efforts have been made to develop procedures for minimizing such disruptions. One approach involves keeping employees on the same shift for several weeks rather than for a

short duration.^[8] This schedule give individuals more opportunity to reset their biological clocks than do weekly changes in shift. Another procedure is to expose people who must stay awake at night to bright light just before they would normally go to sleep; this resets their circadian rhythm, so they have an easier time staying awake - and alert. In the present study among the risk factors of hypertension age, BMI , smoking habit , pack year and duration of alcohol consumption were significantly associated with development of Hypertension. These factors are related to development of stress and thus lead to Hypertension. Among the risk factors, four are modifiable risk factors. To tackle this problem periodic health examinations and BP monitoring should help in early diagnosis and remedial measures. Health education about prevention and control of hypertension and other lifestyle disorders can be offered at the workplace. Promotion of healthy food habits can be facilitated by providing subsidized canteens as has been done by many IT industries.

Conclusion

As among the significant risk factors four are modifiable more emphasis to be given on life-style modification and periodically blood pressure check-up should be initiated to detect hypertension early.

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