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Prevalence of Hypertension in Adolescent in Northern Area

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ABSTRACT

Introduction - *The aim of the study was to study the prevalence of hypertension in adolescent school children Adolescence is characterized by an exceptionally rapid rate of growth and is often variable in individual due to its dependence on genetic, hormonal and nutritional factor.*

Material and methods- *The study was conducted in Hind Institute Of Medical Sciences which was selected randomly from outdoor patients. Total of 410 mid adolescent school children of age ranging from 12- 15 year belonging to class 7th to 9th were taken.General information and socio-economic details of study subjects were obtained and their blood pressure was measured by mercury sphygmomanometer.*

Result - *In our study 100 (50%) children were male and 100 (50%) were female. Maximum number of study subjects (37.5%) was in the age group of 12-13 years. Though 138 were normotensive, pre-hypertension was noted in 31 and hypertension was noted in 29 adolescent study subjects, which is a serious danger signal.*

Conclusion-*Looking at the high prevalence of fast food consumption and also high prevalence of stage I and stage II hypertension among study subjects, proactive preventive measures focused on adolescents and their parents are strongly recommended to avoid future hypertensive epidemic in younger population*

KEYWORDS : Adolescence, Hypertension, Obesity, Junk food

INTRODUCTION -

Adolescence is one of the most dynamic stages of human development. It is characterized by an exceptionally rapid rate of growth and is often variable in individual due to its dependence on genetic, hormonal and nutritional factor1. WHO defines adolescence both in terms of age (spanning the ages between 10 and 19 years) and in terms of a phase of life marked by special attributes2. Adolescents comprise approximately one-fifth of the world's population and most of them (84%) live in developing countries3.

In Indian adolescent school children, there is a high prevalence of obesity, hypertension, and hypercholesterolemia4. Also, obesity is increasing at an alarming rate throughout the world. Today it is estimated that there are more than 300 million obese people world-wide5Eighty percent of overweigh 10-14 year old adolescents are at risk of becoming overweight adults compared to 25% of overweight preschool children (< 5 years old) and 50% of 6-9 year old overweight children6.Adolescent are more engaged in indoor activities due to computer, internet, video games and due to highconsumption of junk food and low level of physical inactivity, make them prone towards many diseases which are non communicable like obesity, hypertension and diabetes mellitus at an earlier age. The risk of developing hypertensive cardiovascularcomplications is greater in younger than in older individuals7. The younger the age of onset of hypertension, greater the reduction in life expectancy, if the bloodpressure is left untreated8. It has also been notedthat even asymptomatic adolescents with mild bloodpressure elevations can have target organ damage9,10.Adolescents with high blood pressure have a significantlygreater clustering effect of metabolic syndromefactors when compared to adolescents with low bloodpressure11.

Material and Methods -

The present cross-sectional study was carried out from April 2016 to July 2016 in Hind institute of medical sciences which were out patients, mid adolescent school children.

The blood pressure measurements were taken and recorded using mercury sphygmomanometer under standard conditions.

Result -

In our study 100 (50%) children were male and 100 (50%) were female. Maximum number of study subjects (37.5%) was in the age group of 12-13 years. Though 138 were normotensive, pre-hypertension was noted in 31 and hypertension was noted in 29 adolescent study subjects, which is a serious danger signal.

The prevalence of pre hypertension & stage I hypertension was 15.5% & 12% respectively among study subject. 18% of male student were having stage I hypertension as compared to 6% for female students.

Table: - 1.Age & Sex wise distribution of the Study subjects

Age(in Yrs)	Male (%)	Female (%)	Total (%)
11-12	25(25%)	18(18%)	43(21.5%)
12-13	35(35%)	40(40%)	75(37.5%)
13-14	25(25%)	18(18%)	43(21.5%)
14-15	15(15%)	24(24%)	39(19.5%)
Total	100	100	200

Table No 3. Gender wise distribution of study subjects according to Hypertension

Hypertension					
Gender	Normal	Pre-HT	Stage I HT	Stage II HT	TOTAL
Female	78(78%)	11(11%)	6(6%)	5(5%)	100
Male	60 (60%)	20(20%)	18 (18%)	2 (2%)	100
TOTAL	138 (69%)	31(15.5%)	24(12%)	7(3.5%)	200

Discussion-

In our study on school going 200 children, reported the prevalence of elevated blood pressure after first screening as 15.5% which was similar to another study.(12)

Another study conducted by McNiece KL et.al on 6790 adolescents (11-17 years) reported prevalence of pre-hypertension as 15.7%, stage I hypertension as 2.6% and stage II hypertension as 0.6% which were simmilar to our study.(13)

Fuiano N et.al performed school based screening of 1563 children (3-16 years) and reported the prevalence of elevated blood pressure at first, second and third screening was 35.1%, 33.8% and 23.9% in males and 41%, 40.2% and 31.2% in females which were higher to our study(14).

Conclusion

Looking at the high prevalence of fast food consumption and also high prevalence of stage I and stage II hypertension among study subjects, proactive preventive measures focused on adolescents and their parents are strongly recommended to avoid future hypertensive epidemic in younger population.

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