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Key Pointer

BPCON 2020 was a roaring success by any stretch and by any standard. It was the first virtual conference for any national organization and was lauded by one and all as an educational and technical success.

Comparative Study of Platelets and Blood Pressure in Smokers and Non-Smokers: A Hospital-based Study

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ABSTRACT

Introduction: Smoking and its intensity effect platelet functions and correlation exists between smoking, inflammation, platelet and cardiovascular diseases including hypertension.

Aim: Effects of smoking on platelets were studied in smokers and correlation with blood pressure was analysed.

Materials and methods: 122 male (smokers and non-smoker with 61 subjects each) were studied. Platelet counts, Mean Platelet Volume were analysed using automated analyser. Systolic and diastolic blood pressure were measured and correlation with MPV was done. Data was analysed using R software and $p < 0.05$ was taken as significant.

Results: There was no difference in mean age. Platelet count was non-significantly higher in non-smokers than smokers. MPV and systolic and diastolic blood pressure were significantly ($P < 0.001$) raised in smokers as compared to non-smokers. There was non-significant ($p = 0.497$) reduction in the platelet counts and significant increase ($p < 0.001$) in MPV with increase in smoking intensity. With increase in the severity of smoking from mild to severe on the basis of pack years significant increase in systolic ($p < 0.001$) and diastolic ($p = 0.001$) blood pressure were observed. Significant positive correlation of MPV with systolic ($r = 0.421$, $p < 0.001$) and diastolic blood pressure ($r = 0.379$, $p < 0.001$) was present in all study subjects and significant correlation of MPV with systolic ($r = 0.506$, $p < 0.001$) and diastolic blood pressure ($r = 0.327$, $p = 0.01$) was observed in smokers.

Conclusions: Smoking and its intensity effects platelet count and MPV. There appears a correlation between MPV and blood pressure. Automated analysers provide simple technique to study platelet variations and are useful in risk assessment and prevention of effects of smoking on blood pressure.

Key words: Smoking, hypertension, smoking intensity, platelets and Mean platelet volume

Association of Sonographically assessed Visceral and Subcutaneous Abdominal Fat with Insulin resistance in Prediabetes

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ABSTRACT

Introduction : Obesity is a major public health problem. Visceral adipose tissue accumulation, through increased fatty acid production, may be involved in the genesis of insulin resistance. Insulin Resistance complicates obesity and pre-diabetes and leads to metabolic syndrome. Visceral abdominal Fat, not Subcutaneous Abdominal Fat better correlates with insulin resistance. Hence the present study was undertaken to study the association of Sonographically assessed visceral and subcutaneous abdominal fat with insulin resistance in patients with prediabetes.

Material & Methods: It was a hospital-based cross-sectional study done in prediabetes subjects. All the subjects were called fasting overnight and were given a structured questionnaire designed by the investigator. Fasting and postprandial blood sugar, lipid profile, Hb1Ac and fasting insulin levels was done in every subject. Ultrasound assessment of subcutaneous and visceral abdominal fat, fatty liver and fatty pancreas was done.

Results: Seventy Five patients (males 35 & females 40) were studied. Twenty nine patients had fatty liver and 40 patients had fatty pancreas. Among all sonographic parameters visceral abdominal fat thickness (VAF) showed a significant positive correlation with insulin resistance ($p < 0.05$). Subcutaneous abdominal fat thickness (SAF) had a positive though statistically non-significant correlation with insulin resistance. Visceral abdominal fat thickness correlated best with fatty pancreas and had a significant positive correlation with insulin resistance.

Conclusion: Fatty pancreas and visceral abdominal fat prove to be two important indices which mark the risk of insulin resistance thus may be considered an important predictor for screening of metabolic syndrome.

Conflict of Interest

None

Association of Short-term Blood Pressure Variability with Risk of Obstructive Sleep Apnoea as assessed by Modified Berlin's Questionnaire in Young Adults

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ABSTRACT

Background: Blood pressure variability is an independent risk factor for cardiovascular diseases not only in hypertensives but also in normotensives. The present study was designed to investigate BP variability in subjects at risk of Obstructive sleep apnoea (OSA).

Objectives:

1. To assess the risk of OSA using Modified Berlin Questionnaire.
2. To assess the Coefficient of short-term BP variability using 24-hours Ambulatory blood pressure monitoring (ABPM).
3. To compare Coefficient of BP variability with risk of OSA.

Methods: 120 young adult males, age between 18 to 30 years were enrolled. Subjects with H/O smoking and alcoholism, diabetes mellitus, cardiovascular or respiratory or renal disorder were excluded. All subjects were administered screening questionnaire first and 30 subjects who gave one or more positive response were administered modified Berlin questionnaire and were classified under high and low risk of OSA. Short-term BP variability coefficient was assessed by 24-hours ABPM using Contec Ambulatory Blood Pressure Monitor.

Results: 5.83% of the subjects had risk of developing OSA based on Berlin score. Coefficient of nocturnal BP variability for both systolic and diastolic BP was significantly more in subjects with an increased risk of OSA [$p < 0.01$]. Whereas change in the coefficient of BP variability for 24 hours and for day time was not significant.

Conclusion: Nocturnal BP variability increased in subjects with risk of OSA. There is a need to assess the Blood pressure variability in persons with risk of OSA or suffering from OSA to prevent serious consequences in the future.

Correlation of FEV1 and Systolic Blood Pressure in Healthy Individuals

Tanuj Mathur

ABSTRACT

Cardio Vascular Disease (CVD) is the leading cause of morbidity and mortality worldwide. Identifying it at the early stage is significant for the treatment outcome and prognosis. Studies show that lung disease is independently associated with cardiovascular disease, either existing alone or as co-morbidities. Physicians play an important role in identifying the disorders for effective early intervention

benefits. Cardiovascular parameter such as systolic BP and pulmonary parameter such as FEV1 can be easily done in the clinic. An understanding of their relationship will help clinicians and patients to provide clues in identifying a disorder if either parameter fluctuates. This cross-sectional study hence aimed to assess the correlation between Forced Expiratory volume (FEV1) and Systolic Blood Pressure (SBP). FEV1 and Systolic blood pressure was recorded on 40 normal apparently healthy individuals after fulfilling the eligibility criteria. FEV1 was measured using a Spirometer while Systolic Blood pressure readings were recorded with the help of Sphygmomanometer. The measurements were recorded thrice in a day, i.e. in the morning, afternoon and evening to accommodate for the circadian variations. Pearson correlation test was applied to evaluate the relation between FEV1 and SBP. A strong linear positive correlation was noted between FEV1 and Systolic BP ($R = 0.649$, $p < 0.001$). The present study suggests a possible influence of physiological parameter (SBP) on respiratory parameter (FEV1) and viceversa.

To Study the Prevalence of Hypertension and Glycemic Control in Adult Type-2 Diabetes Mellitus Patients

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ABSTRACT

Background and Aims: Hypertension is a serious problem and has strong correlation with cardiovascular diseases in type 2 diabetes mellitus patients. Risk of hypertension may be increased with long duration of uncontrolled blood pressure and diabetes. So, our aim was to study the prevalence of hypertension and glycemic control in adult type-2 diabetes mellitus (T2DM) patients.

Materials and Methods: In our study total 140 type 2 diabetes mellitus patients aged ≥ 18 years selected by random sampling were included. It was a retrospective study. All patients' height, weight, BMI, HbA1c, systolic blood pressure, diastolic blood pressure was recorded. The ANOVA "F" test Chi-square test and paired sample "t" test used for statistical analysis.

Results: In our study, the prevalence of Hypertension was 69.8% and most of the T2DM patients were women (58%). Out of 90 T2DM patients aged > 60 years, 79.4% were hypertensive. 65.8% of T2DM patients between the age of 40 to 60 years and 22.4% age < 40 years were also hypertensive ($p = 0.002$). Blood pressure-controlled status were divided into controlled, uncontrolled, systolic and diastolic high blood pressure. All patients were compared between the last visit & one year before, which reported 57.4% v/s 32.6%, 13.7% v/s 49.9%, 18.3% v/s 12.6%, and 8.4% v/s 5.2% respectively. There were significant rises in % of systolic blood pressure (by 10.2%) and diastolic blood pressure (by 5.2%) $p < 0.0001$, from the first visit. Blood pressure-controlled status for aged group > 60 years showed increasing

in systolic blood pressure and diastolic blood pressure which were significant ($p < 0.0001$). Regarding glycemic parameters, 69.4% type 2 diabetes mellitus patients had poor glycemic controlled Hb1Ac (≥ 6.5) and only 19.4% remained controlled after one year ($p < 0.0001$).

Conclusion: Our study showed that older age group as well as uncontrolled T2DM patients had high prevalence of Hypertension, increasing prevalence of high systolic blood pressure and high diastolic blood pressure. So, for living a healthy life, we highly suggest to control blood sugar level and blood pressure.

Comparative Study of Serum TSH and BMI in Hypothyroid and Euthyroid Women visiting IIMSR hospital, Lucknow

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ABSTRACT

Background: Thyroid disorders are the most prevalent disorders in India, next to diabetes mellitus. Approximately, 42 million people in India are suffering from thyroid disorders. India has the world's biggest goiter belt in the sub-Himalayan region. There is close relationship between body composition and thyroid hormone. In women, the risk of developing hypothyroidism increases with age, during pregnancy, the postpartum period and menopause.

Aim: The present study is undertaken to compare the level of TSH and BMI in hypothyroid and euthyroid women.

Material and Methods: Sample size were 60 females. Based on inclusion and exclusion criteria, blood samples were collected under aseptic conditions, Serum TSH (mIU/L) estimation was done using mini vidas fully automated analyser (fluorescent method) in central pathology of IIMSR, Lucknow. Revised BMI guidelines for India by WHO were used to calculate BMI. The p-value < 0.05 was considered significant.

Results: The result indicated that the mean value of BMI, serum TSH were higher in hypothyroid women than in euthyroid women. Mean value of BMI (27.97 ± 4.25), was higher in hypothyroid women than euthyroid women (23.98 ± 4.38).

Conclusion: Present study concluded that hypothyroid women have higher BMI as compare to euthyroid women and there is a positive correlation between serum TSH and BMI.

Keywords: *Hypothyroidism, TSH, BMI, Goiter.*

Prevalence of Pregnancy-induced Hypertension and Pregnancy Outcomes among Women Seeking Maternity Services in Lucknow, India

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ABSTRACT

Pregnancy-induced hypertension (PIH) is one of the most common causes of both maternal and neonatal morbidity, affecting about 5–8% of pregnant women. It is associated with adverse pregnancy outcomes including maternal morbidity and mortality. The aim of the study is to estimate the prevalence of PIH as well as the risk factors related to PIH, and maternal and fetal outcomes in Lucknow.

Method: We retrospectively evaluated the medical records of 7493 women who delivered at Community Health Centre, Indira Nagar, Lucknow, between January 2019 to January 2020. All cases of pregnancy-induced hypertension were included. Pregnancy-induced hypertension was classified as gestational hypertension, preeclampsia, or severe preeclampsia-eclampsia. An association was assessed for maternal age, parity, gestational age, antenatal care, severity symptoms of pregnancy-induced hypertension, proteinuria, hemoglobin, platelet count, creatinine, serum oxaloacetic transaminase (SGOT) level, labor onset, type of anticonvulsant or antihypertensive given, mode of delivery, fetal outcome, fetal birth weight, referral and maternal outcome.

Result: The findings of the current study is under evaluation.

Conclusion: The unpleasant effects of hypertension in pregnancy warrant the need for training, routine prenatal care, the early detection and appropriate and timely treatment of hypertension at early stage of pregnancy, and follow-up after delivery.

Prevalence and Risk Factors of Prehypertension and Hypertension: A Cross-sectional Study

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ABSTRACT

Objective: Prevalence of Hypertension (HTN) is rapidly increasing in developing countries leading to high cardiovascular and cerebrovascular morbidity and mortality. The objective of this study was to determine the prevalence and risk factors of Pre-HTN and HTN.

Design and Method: This was an epidemiological community-based study done in urban population. A questionnaire was designed to collect information on demographic data, family income, education, marital status, smoking/tobacco intake, dietary history, physical activity and past history of diseases like HTN, hyperlipidemia, diabetes and any other significant history. Physical examination was performed to assess height, weight, waist and hip ratio and Blood Pressure (BP) measurement as recommended by WHO. Fasting blood sample for measurement of glucose & total cholesterol were done from all participants. JNC-7 (Joint National Committee-7) criteria was used for classifying HTN.

Results: Descriptive statistics were done and logistic regression was performed to determine the association of hypertension with its concomitant risk factors. Out of total 1646 recruits, only responses from 1592 subjects were analyzed as rest gave incomplete information or refused to participate. Study subjects aged 25 to 65 years were included in study. The prevalence of HTN was 36.8% (male 29.2% and female 41.3%). Mean systolic and diastolic BP were 125.26 ± 12.04 and 72.92 ± 10.50 mmHg, respectively. HTN was highest in 55 to 65 years age group (69%) and pre-HTN highest in 35 to 45 years (38%). Higher odds was found in female subjects, eldest age group, upper socio-economic status, literate and married subjects. Body Mass Index (BMI) and waist-hip ratio were higher in HTN group as compared to pre-HTN & non HTN group. Smoking ($p < 0.001$), alcohol consumption ($p < 0.001$), obesity ($p < 0.001$) elevated LDL cholesterol ($p < 0.05$) other cardiovascular disease ($p < 0.001$), diabetes ($p < 0.05$), were significantly associated with HTN.

Conclusions: The prevalence of HTN and its associated risk factors was higher in our study population. Hence it calls for increased awareness and long-term preventive control measures for pre-HTN group and appropriate treatment guidelines for HTN group to prevent further complications.

Keywords: Hypertension, Prevalence, Risk Factors

Epidemiological Study of Hypertension and its Determinants in a Tertiary Care Teaching and Referral Hospital in North India

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ABSTRACT

Objectives: To determine prevalence of hypertension and blood pressure levels in relation to diet and lifestyle factors in North Indian population.

Design and setting: Cross-sectional survey in 10 randomly selected Outpatient departments in a tertiary care teaching and referral hospital in North India.

Subjects and methods: A total of 1608 subjects (810 males and 798 females) age range 25– 64 years were recruited. Regular food intake

was recorded in dietary diaries, routine blood pressure measurement, anthropometric measurement and questionnaire methods were employed. Diagnosis of hypertension was based on new World Health Organization / International Society of Hypertension (WHO/ISH) criteria. Risk factors were assessed based on the guidelines of WHO.

Results: Age-specific prevalence of hypertension according to WHO/ISH criteria was 26.7%. Isolated diastolic hypertension was present in 51.4% males and 44.8% females. Prevalence was higher in males than females in young age, however prevalence rates are comparable in older age group. Multivariate analysis revealed that factors like age, higher body mass index, higher socio-economic status and certain chronic conditions were strongly associated with hypertension. Higher dietary fat and salt intake, addictions like smoking and lower physical activity were weakly but significantly associated with hypertension.

Conclusion: Association of higher socio-economic status, high fat and salt intake in diet, central obesity with smoking in North Indians with sedentary lifestyle and higher prevalence of hypertension indicate that these populations may benefit by increasing physical activity and decreasing fat and salt intake in order to decrease blood pressure levels.

Keywords: Central obesity, Age-specific blood pressure, Dietary fat, Smoking

Correlation of Hypo Level of IL-10 and Hyper Level of Visfatin with Hypertension and other Metabolic Risk Factors among Indian Obese Children

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ABSTRACT

Introduction: Adipocytokines such as Interleukin-10 (IL-10) and Visfatin impart an essential role in development of hypertension and other metabolic risk factors. Disturbance of these peptides level could lead to cardiac diseases in obese children.

Objective: To study the hypo level of Interleukin-10 and hyper level of Visfatin correlated with hypertension and development of other cardiovascular diseases in Indian obese children. We investigated the role of IL-10 & Visfatin with hypertension and other metabolic risk factors in obese children.

Methods: The study included 220 obese children and adolescents (100 without metabolic syndrome and 120 with metabolic syndrome) (body mass index [BMI] $\geq 84^{\text{th}}$ percentile) of age group 5-17 years. The obesity was determined on the basis of International Diabetes Federation (IDF) guideline [Adiposity by Waist Circumference, blood glucose level, dyslipidaemia- Triglyceride (TG) and High-Density Lipoprotein (HDL), Arterial hypertension]. Fasting blood samples was collected to determine these biochemical parameters. The brachial

resting Blood Pressure (BP) of participants was measured 3 times at a 2-min interval after 10 min of rest in supine position with the back supported, by the “gold standard” method. To measure BP in children using a validated automated aneroid non-mercury manometer were studied in obese children. Serum IL-10 & Visfatin level was estimated by ELISA and PCR by using these adipokines-specific primers.

Finding: Obese with Metabolic Syndrome (MS) children showed a borderline highly significantly decrease ($p < 0.01$) in serum IL-10 levels, however, highly significantly increased ($p < 0.01$) in visfatin levels, blood glucose level, systolic B.P., triglyceride level as compared to without MS obese children. The molecular amplified DNA expression was also significantly decreased ($p < 0.01$) for IL-10 adipokine and significantly increase ($p < 0.01$) for Visfatin in obese with MS as compared to obese without MS. In correlation analysis, we found IL-10 proteins was significantly negatively correlated and Visfatin protein was significantly positively correlated with Blood Pressure among obese with MS children.

Conclusions: These results indicate that hypo level of serum IL-10 & hyper level of Visfatin adipokines and expression of primer-specific amplified DNA of these proteins are correlated with high B.P. Thus, these adipokines have great interplay with hypertension and have potential to influence cardiovascular disease among Indian obese with Metabolic Syndrome children.

Keywords: Obesity, IL-10, Visfatin, hypertension, Blood glucose level, waist circumference, Metabolic risk factors.

Deciphering the Prevalence of Hypertension in Patients with Fibromyalgia Syndrome

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ABSTRACT

Objective: This study aimed to evaluate the association and prevalence of hypertension in patients with Fibromyalgia Syndrome (FMS).

Subjects: 30 consecutive patients with FMS were screened for hypertension and it was found in 12 patients. FMS was diagnosed according to the 1990 American College of Rheumatology criteria. The blood pressure was measured by using mercury sphygmomanometer and according to WHO protocol. Symptoms of FMS were measured by FIQR. Counts of 18 tender points were performed by thumb palpation and levels of hormonal profiles (cortisol and serotonin) and were recorded in each patient.

Results: The main outcome measure was the association of FMS with hypertension. Hypertension was diagnosed in 12 patients with FMS.

Furthermore, a very significantly higher levels of cortisol was found among patients with FMS along with hypertension ($p < 0.01$) whereas a significantly higher levels of cortisol were found in FMS patients without hypertension ($p < 0.05$). Moreover, the number of tender points, and FIQR scores, were much higher in FMS with hypertensive group of patients than the other group.

Conclusion: Hypertension is not a very common finding in patients with FMS, but its prevalence could be related to disease severity.

Pharmacogenomics - A Supplementary Tool to JNC Guidelines for Hypertension Treatment; A Systematic Review.

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ABSTRACT

Background: JNC 8 (Joint National Committee) classification is an evidence-based guideline for the management of high blood pressure in adults. Evidence is drawn from randomized control trials which represent gold standard for determining efficacy and effectiveness of treatment. However, more than half of the thus treated morbid American and European population have uncontrolled blood pressure which may partly be explained by inter-patient variability in response to drugs secondary to genetic polymorphism. Thus, pharmacogenomics testing may be a supplementary tool to guide treatment.

Method: The analysis was done following PRISMA guidelines. It included original articles, case reports, systematic reviews and metanalysis studies. Google scholar, PubMed, Cochrane Central, Scopus and OMIM databases were exploited for the analysis.

Result: Genotype can affect drug metabolism, transport and sensitivity of drug at its target site. Unbiased genome-wide analysis of blood pressure genomics has thus identified several genetic variants of the same leading to isolated systolic blood pressure, diastolic blood pressure and essential hypertension. There are likely hundreds of such loci with small effects on blood pressure opening a perspective on the genetic architecture of blood pressure helpful to predict antihypertensive response. Where on one hand JNC guidelines do not assure that the given treatment will be effective in an individual patient, pharmacogenomics holds promises for tailoring treatment for each unique patient who may not fit into the mould of general study from which the JNC guidelines have been drawn.

Conclusion: With extensive research on Pharmacogenomics, hypertension can be definitely brought down post-treatment, the hierarchy charts where it is currently stated as the leading cause of cardiovascular morbidity.

The Immediate Effect of Vestibular Stimulation on Blood Pressure and Pulse Rate in Healthy Female Students

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ABSTRACT

Background - Normal vestibular function is essential for the maintenance of balance, autonomic regulation of the cardiovascular system, endocrine, respiratory, sleep, and cognitive functions. It affects blood pressure (BP) and pulse rate (PR) in animals and human beings within normal limits by decreasing sympathetic activity and increasing parasympathetic activity.

Aim and objectives: To evaluate the immediate effect of vestibular exercise on blood pressure and pulse rate in healthy females.

Materials and methods: Twenty-five healthy female students (MBBS), aged 18-25 years were enrolled in the study after obtaining informed consent. After recording the baseline BP and PR, the participants were asked to perform 2 minutes each of vestibular exercises which included A) upward and downward head bending, B) side-to-side head movement, C) shoulder shrugging, and D) walking in a straight line while looking sideways. Each exercise was followed by the next exercise after 2 minutes of rest. BP and PR were recorded immediately after exercise (right arm) using EC digital sphygmomanometer. Data were analyzed by using MiniTab 14. Statistical test used were One Way Anova. p -value < 0.05 was considered as significant.

Result: We observed a statistically insignificant decline in systolic BP ($p < 0.30$) but a statistically significant decline in diastolic BP ($p < 0.005$ and pulse rate ($p < 0.04$) following acute vestibular stimulation.

Conclusions: Our study provides further evidence for the autonomic modulation of vestibular stimulation. Hence, long-term practice of vestibular stimulation may have beneficial effects on autonomic functions.

Keywords: Autonomic regulation, Vestibular function, Hypertension

Correlation of Blood Pressure in Diabetic Retinopathy Patient with or without Cataract.

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ABSTRACT

Background: A cataract is a major cause of blindness in developing countries. Various cardiovascular and metabolic conditions have been proposed as possible contributors to the etiopathology of the disease, including diabetes mellitus (DM), arterial hypertension, and deranged lipid profile.

Method: The study included the recording of data (BP, FBS, FLP, HbA1C) of 184 diabetic patients, aged 45-55 years, undergoing for unilateral, uneventful cataract surgery. Patients were assessed for the stages of cataract and signs of diabetic retinopathy (DR) after careful fundus examination and divided into two group based on presence ($n=78$) or absence ($n=86$) of cataract. Blood pressure measurement done as per the guideline given by ACC/AHA 2017.

Results: Significantly ($p < 0.0001$, CI 95%) higher blood pressure was found in DR patients with cataract (141 ± 5.6 mmHg) in comparison to those without cataract (134 ± 8.1 mmHg) patient.

Conclusion: High blood pressure also an aggravating factor for the development of cataract in DR Patient. Recent technological advancements in cataract surgery have improved surgical outcomes. However, in diabetic individuals, the scale of improvement is still a matter of debate. Therefore, it is better to prevent cataract development, simply by controlling of BP rather than waiting for surgery.

Arterial Stiffness Index and Carotid Femoral Pulse Wave Velocity Using Cold Pressor Test (CPT) in normal BMI and different grades of obesity.

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ABSTRACT

Background: Evaluation of altered cardiovascular autonomic system due to changes in BMI implicating CPT can be used as an early predictor of future hypertension and cardiovascular disease.

Objective: Evaluation of baseline Arterial Stiffness Index (ASI) and Carotid Femoral Pulse Wave Velocity (cf-PWV) changes during CPT, in different grades of obesity.

Material And Methods: This comparative experimental study was conducted, on 105, 25 to 35 years old subjects, comprising 35 in each group i.e., normal BMI, overweight and obese groups according to WHO classification. cf-PWV and ASI were measured on Periscope, applying CPT viz. before (preCPT), during (duCPT) and after (postCPT), and data were analysed by ANOVA and paired t-test.

Results: All duCPT and postCPT values for ASI were significant ($p < 0.05$), despite statistically indifferent baseline values among all BMI groups. Whereas the overweight and obese group have

statistically significant increase in the cf-PWV during the CPT (<0.05) and a statistically insignificant increase in the cf-PWV after CPT ($p>0.05$).

Conclusions: A positive correlation of cf-PWV and ASI to the BMI was found.

Profile and Control of Hypertension through Telemedicine Patients

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ABSTRACT

Introduction: Hypertension is an important health problem in rural areas also. Therefore, its screening and prevention both are needed to control its further spread in rural populations. It is proposed that we can achieve this through telemedicine and provide better health care to people living in distant places far away from cities.

Methods: National Heart Institute in collaboration Hospital Guide Foundation, Jewar, conducted telemedicine sessions for rural patients. A total of 250 patients attended tele sessions problems from June 2018 to February 2020. Out of 250 cases, there were 77 (30.8%) cases who had hypertension. These cases were graded and their control status was based on the basis of JNC VIII.

Results: There were 43(55.8%) males and 34(44%) females. The most common age group in our study was 41-60 years (61%). 90% belonged to low socioeconomic strata. About 25 % were tobacco users. Obesity was recorded in 67.5%. Most (61%) had hypertension and diabetes both while hypertension alone was seen in 29.8% cases. Hypertension along with other comorbidities was observed in 8.9% patients. Follow-up blood pressure data was available in 57 cases out of which 75.4% showed optimal control:

Subgroup	Total cases (%)	Controlled (%)	Uncontrolled (%)
Age ≥ 60 years	6(7.7)	1(1.2%)	5(6.49)
Age < 60 years	18(23.3%)	8(10.3)	10(12.9)
Pt with diabetes	53(68.8)	31(40.2)	22(28.5)
Total	77	40(51.9)	37(48)
After FU			
Age ≥ 60 years	4(7)	4(7)	0
Age < 60 years	12(21)	6(10.5)	6(10.5)
Pt with diabetes	41(71.9)	33(57.8)	8(14)
Total	57	43(75.4)	14(24.5)

Conclusion: Hypertension is common in rural areas. It is associated with diabetes in most cases. Telemedicine is a cost-effective tool to manage hypertension in rural areas.

Varied Clinico-haematological Presentations of Patients of Megaloblastic Anaemia with Deficiency of Vitamin B12 and Folic Acid in a Tertiary Care Center of Northern India

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ABSTRACT

Introduction: Megaloblastic anaemia is caused by vitamin B12 and/or folic acid deficiency. Clinically megaloblastic anaemia may present as a continuum of asymptomatic metabolic abnormalities ranging to life-threatening clinical syndrome. Patients with megaloblastic anaemia have a risk of developing many complications.

Aim: Present study aimed to evaluate the varied clinic haematological presentation of patients of megaloblastic anaemia associated with deficiency of vitamin B12 and folic acid.

Materials and Methods: This cross-sectional study was carried out in the Department of Pathology, Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, India, over a period of 18 months. We studied 90 cases which were grouped as follows: Group A: no deficiency; Group B: vitamin B12 deficiency; Group C: folic acid deficiency; Group D: combined deficiency. Complete blood count was done using Sysmex XS-800i. Vitamin B12 and folic acid assay was done using Enzyme-linked Immunosorbent Assay (ELISA). Bone marrow aspiration was also done.

Results: Out of 90 patients, maximum ($n=42$; 46.7%) had vitamin B12 deficiency. In all four groups, weakness and fatigue were the most common complaints. All the cases had pallor. Icterus, tingling, numbness and murmurs were relatively rare. All the fourteen cases in which bone marrow examination was carried out had erythroid hyperplasia and megaloblastic reaction.

Conclusion: Based on above findings, it was concluded that there is a significant difference in the clinical presentation of patients of megaloblastic anaemia with vitamin B12 and folic acid deficiency. However, not very significant difference has been noticed in the haematological parameters. Thus, clinical and haematological profiles, both should be thoroughly assessed to differentiate between vitamin B12 and folic acid deficiency.

Association of Renalase Gene Polymorphism in Patients of Hypertension with or Without Type 2 Diabetes Mellitus

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ABSTRACT

Increasing prevalence of hypertension at a rapid pace in developing nations is one of the major causes of death and disability among the elderly population. Hypertension though being controllable disease is a major factor for causing heart disease in the adult population and is a common co morbidity in individuals with type 2 diabetes and a major risk factor for macro – and micro vascular complications. India has already attained the distinction of being declared as ‘diabetic capital of the world’. Renalase which is secreted by the kidney and metabolize circulating Catecholamines and has significant hemodynamic effects, participates in the regulation of cardiovascular function. Its deficiency or single nucleotide polymorphism are associated with essential hypertension, cardiac hypertrophy, stroke, and diabetes. The aim our study was to know the association of polymorphism of Renalase gene (rs 2576478 and rs 2296545) hypertension with or without type2 Diabetes Mellitus. The study was carried out on a sample size population of 80 patients having hypertension with and without type 2 diabetes mellitus each. Equal numbers of demographical matched healthy individuals were included as controls. Study concluded that in Renalase gene rs2576178, AA genotype was found in higher proportion of hypertensive and controls as compared to hypertensive diabetic and GA genotype was found in higher proportion of hypertensive diabetic group as compared to hypertensive group and control group. In Renalase gene rs2296545, CC genotype was found in higher proportion of hypertensive diabetic and hypertensive group as compared to control group and CG genotype was found in higher proportion of control group as compared to hypertensive diabetic & hypertensive group, GG genotype was found in higher proportion of hypertensive group as compared to hypertensive diabetic & control group.

Study of Cognitive Functions, Oxidative Stress and Inflammation in Patients of Metabolic Syndrome

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ABSTRACT

Introduction: The metabolic syndrome (MetS) is a cluster of metabolic abnormalities: diabetes, hypertension, dyslipidemia, abdominal obesity, and high insulin resistance. Literature shows correlation of cognitive dysfunction with components

of metabolic syndrome in limited no of patients, yet a clear association between the two has not been established. This study had been planned with an aim to assess the correlation of metabolic syndrome with cognitive dysfunction and also see the association of inflammation and oxidative stress with cognition in these patients.

Material: It was a cross-sectional study including 100 patients. Patients of metabolic syndrome were selected according to international diabetes federation guidelines and all adult subjects who were able to read and write Hindi and English were included. Patients with psychiatric illness, stroke, neurological disorders, critically ill and with indication of infection, systemic inflammation and trauma were excluded. Cognitive functions were assessed by Montreal cognitive assessment test (MOCA) and PGI memory scale while oxidative stress by pro-oxidant (MDA), & antioxidant (SOD, GSH) levels and inflammation through hsCRP.

Observation: Positive correlation was found between impaired cognitive functions and components of metabolic syndrome, dementia was present in 16%, mild to moderate cognitive dysfunction in 58 and 26% had normal cognitive functions. MDA and Hs CRP as markers of oxidative stress and inflammation had significant positive correlation ($p < 0.003\%$ and $p < 0.004\%$, respectively) with subjects having metabolic syndrome and cognitive dysfunction. Hypertension and poor glycemic control also have positive correlation with cognitive dysfunction in patients of metabolic syndrome. SOD and GSH had non-significant negative correlation with cognitive functions.

Conclusion: The present study shows impairment of cognitive functions in patients of metabolic syndrome and there is increase in both oxidative stress and inflammation, concluding that inflammatory pathways and oxidative stress is involved in impaired cognitive functions in metabolic syndrome.

Study of Prevalence of Hypertension in Patients of Age-related Macular Degeneration

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ABSTRACT

Introduction: Age-related macular degeneration (AMD) is the most common cause of visual loss in elderly people worldwide accounting for 8.7% of the total blindness globally. With increasing coexistence of morbidities, like hypertension with age-related macular degeneration, it becomes important to understand the role of increased blood pressure in the development as well as progression of AMD. Hence, this study was done to assess the role of hypertension in age-related macular degeneration in North Indian population.

Material and Methods: 150 subjects were enrolled in this hospital-based observational study carried out at the Department of

Ophthalmology of a tertiary care center in North India. Detailed history regarding ocular complaints, systemic diseases and medical history was obtained. Blood investigations accordingly, to come to the desired conclusion.

Results and Discussion: The mean age of the patients was 65.33 years which were further divided into various age groups. Maximum number of patients belonged to the age group of 50-60 years (n=99; 52.10%) The study subjects were grouped according to the presence and absence of hypertension. Among patients who had hypertension in cases of ARMD, 30% of the subjects had hypertension since >5-10 years, followed by >20 years (20%) >1-5 years, >10-15 years and >15-20 years (15% each) and this association of duration of hypertension was found to be statistically significant (p=0.028)

Conclusion: The involvement of essential hypertension in its pathogenesis has been well covered in the literature since it was first recognized. Hemodynamic abnormalities appear to contribute to AMD, with the renin-angiotensin system playing a significant role. Many studies have demonstrated that high blood pressure is associated with lower choroidal blood flow and disturbed vascular homeostasis in these patients.

Study of Small Intestinal Bacterial overgrowth (SIBO) in Patients of Type II Diabetes Mellitus having Central Obesity

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ABSTRACT

Introduction: Small intestinal bacterial overgrowth is a heterogeneous syndrome characterized by an increased number $>10^5$ - 10^6 organisms/ml and/ or abnormal type of bacteria in the small bowel. Early diagnosis of SIBO can lead to early management of gastric complaints in diabetic patients which is usually diagnosed as diabetic gastroparesis and hence, undertreated.

Aim: To study the prevalence of small intestinal bacterial overgrowth in type 2 diabetes patients having central obesity.

Materials and Methods: Study included 108 patients in which 54 diabetic patients with central obesity who met the inclusion criteria were included in the case group and 54 age and sex-matched participants were included in the control group. Routine investigations were carried out for both groups. Participants were kept fasting for 12-hours and on a gluten-restricted diet for 48-hours and were then exposed to a hydrogen breath analyser.

Readings were noted at baseline and then every 15 minutes after ingestion of 50gms of glucose for 2 hours. Hydrogen breath test Readings and baseline investigations were then compared for both groups.

Results: The study showed an increased prevalence of SIBO in obese Type 2 diabetes mellitus patients as compared to age and sex-matched controls. 18 (33.33%) out of 54 subjects in the case group and 9 (16.67%) out of 54 subjects in the control group were diagnosed to have SIBO. Dyslipidemia and central obesity were found to be independent risk factor in this study.

Conclusion: Prevalence of SIBO is high in patients with diabetes and central obesity. Obesity and dyslipidemia is independent risk factor for SIBO.

The Effect of *Ocimum sanctum* (Tulsi) on Blood Pressure Variables and Other Clinical Parameters in Hypertensives in a Tertiary Care Hospital

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ABSTRACT

Aims and Objectives: The main aim of this study is to investigate the effect of Tulsi on blood pressure & on clinical parameters of hypertensive patients.

Methods: 100 patients were randomly selected for this study from the OPD of Department of Medicine, KGMU. Detailed history of each patient was obtained regarding age, sex, year of diagnosis & duration of Hypertension, associated risk factors, family history and any associated illness. Cases were divided into 2 groups randomly, one group received placebo, served as control group & another group received Tulsi extract & served as a study group. Patients of study group were asked to take 5 ml of Tulsi extract with plain water in morning & evening before food for 3 months regularly. Baseline parameters were taken of every patient i.e. BMI, FPG, BP, HbA1c, Lipid profile.

Results: Anthropometric and Biochemical data of control & study groups were studied for different variables in the beginning and end of the study and there was no significant difference in baseline parameters. On comparing control and study population for effect of Tulsi therapy an improving trend was observed in study group after 3 months of treatment, changes in all parameters were found significant except W/H ratio & BMI.

Conclusion: Tulsi therapy significantly reduces blood sugar, BP, Lipid profile. Therapeutic effect of Tulsi is shown & can be used with diet and drugs for management of high BP.

Study of Biochemical Parameters in MetSPatients with Supplementation of Flaxseed Powder along with Lifestyle Modifications vs Lifestyle Modification without Flaxseed Powder

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ABSTRACT

Introduction: Metabolic syndrome (MetS) is clustering of risk factors resulting in condition leading to atherosclerosis, CVD and non-insulin-dependent DM.

Objective: Study variation in anthropogenic and biochemical parameters with lifestyle modification along with and without flaxseed supplementation on MetS patients.

Study design: 200 MetS, 100 controls enrolled from KGMU for 6 months. 200 MetS divided in group of 100 Mets. Lifestyle modification is recommended to all N 300. In group 2 flaxseed powder was also supplemented in range of 10, 20, and 30gm.

Result: Outcome shows improvements in sugar level in comparison to healthy ones average reduction (12%), BP (10%), and lipid profile-cholesterol, triglyceride, HDL, VLDL, LDL (4.5,6.9,5.2,1.2, and 3.7%) respectively though some patients shows insignificant differences due to less stringent advice followed. Comparing to flaxseed powder group only 30gm supplemented patients shows significant differences 10gm and 20 gm shows insignificant variation to lifestyle modification patients but when comparison to healthy control, overall improvement is much better when considered along with lifestyle modification only patients.

Conclusion: Flaxseed with lower dose of 10 and 20gm may show effect in long duration >6 months but within 6-months shows insignificant effect. 30 gm of flaxseed is optimum dose with no side effect. Hence lifestyle modification and 30 gm flaxseed powder is optimum for improvement.

Keyword: Metabolic syndrome, lipid profile, lifestyle modification.

Current Status of Blood Pressure in Adolescent Students across Schools of North India: A Cross-sectional Study

Vandana Awasthi, Narsingh Verma

ABSTRACT

Objectives: To find the current status of blood pressure in adolescent students in 25 schools in North India

Method: A cross-sectional study was conducted in 25 schools in and around Lucknow, Uttar Pradesh, India from January 2018 to April 2019. A proforma with detailed medical history was filled of 800 students of standard 7th to standard 12th. Anthropometric measurements of height, weight, waist size, hip size were done. Heart rate and Blood pressure both systolic, diastolic was taken thrice each in left and right arm with Omron Blood pressure monitor.

Results: 62% (n= 496) were boys and 38% (n = 304) were girls. Mean age was 14.26 ± 0.8 years. Boys were found to be more obese as compared to girls. There were 92 students (11.5%) were found to have systolic hypertension while 29 (3.62%) were found to have diastolic hypertension. Mean body weight was 46.44 kgs. Average height of 800 students was 145.94 centimetres or 4 feet 9.4 inches. Overall prevalence of hypertension was 15.12% in Indian school-going adolescents. Mean systolic blood pressure for 800 students was 115.13 mm of Hg and mean diastolic blood pressure was 68.17 mm of Hg. Mean heart rate was 86.17. Waist size and hip size were significantly associated with a greater chance of hypertension. Gender were found to be independent predictor for systolic hypertension.

Conclusion: It is recommended that such surveys be carried out in other parts of the country too, so that remedial measures can be initiated as early as possible.

Frequent Consumption of Energy Drinks and their Effect on Blood Pressure, Heart Rate and Blood Glucose in Healthy Adults Working out in the Gymnasium

Abhinav Verma, Narsingh Verma, Vandana Awasthi

ABSTRACT

Aim: To assess the effect of frequent consumption of energy drinks on blood pressure, heart rate and blood glucose in healthy adults working out in the gymnasium.

Methods: 200 healthy young adults, were divided into two groups: the first consumed at least three energy drinks at one-hour intervals, and the second drank the same amount of water. Systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR) and blood glucose (BG) were measured before consumption of energy drink (250 mL per can)/ water (250 mL) and before working out. After working out for 45 minutes (treadmill, cycling and elliptical cross trainer) 1-hour of rest was given to both groups. SBP, DBP, HR and blood glucose were then measured. All participants could report any health problems before and after consuming each portion of energy drink. All parameters were measured thrice weekly for 3 months.

Results: Having consumed three portions of ED (150 to 180 mg of caffeine), the participants presented a significant increase in DBP ($p = 0.033$), by over 10.32%, no significant change in SBP ($p = 0.715$). HR increased in adults drinking 3 energy drinks ($p = 0.040$). Consumption of EDs caused a significant increase ($p < 0.001$) in BG, by 23.5 %, on

average. Some participants reported of palpitations and disturbed sleep which increased after 2 and 3 energy drinks.

Conclusion: Increased diastolic blood pressure, blood glucose, no significant change in systolic blood pressure occurred in healthy young people as compared to their control drinking water.

Association of Blood Uric Acid with the Duration of Diabetes in Type 2 Diabetics: A Pilot Study.

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ABSTRACT

Diabetes Mellitus is the most common non-communicable disease.

Hypothesis: serum uric acid acts as an independent risk factor for the development of type 2 diabetes. Studies revealing the clearance of uric acid reduced with insulin resistance are few in numbers.

Objective: To correlate the levels of blood uric acid with the duration of diabetes in type 2 diabetics.

Methodology: Fifteen type 2 diabetes patients with no history of any complications and other systemic organ & metabolic disorders like gout & obesity randomly selected for this cross-sectional study. A biochemical investigation, like the Uricase method employed for fasting serum uric acid levels estimation. Statistical analysis by the Pearson correlation test used. **Results:** Positive correlation of serum uric acid with the duration of diabetes in type 2 diabetic patients found to be statistically significant ($r = +0.6$, $p < 0.05$). Out of fifteen, eleven of them were suffering from hyperuricemia (73%). Average uric acid level elevated from 6.88 ± 0.95 in people with the duration of diabetes 2 to 6 years to 7.61 ± 3.16 in people with the duration of diabetes 7 to 10 years.

Conclusion: The positive association of fasting serum uric acid with the duration of type 2 diabetes suggests that uric acid acts as an independent biochemical marker for prognosis of the type 2 diabetes. Drugs that reduce uric acid levels may be useful in avoiding the development and prognosis of insulin resistance that causes type 2 diabetes and other complications.

Keywords: *Insulin resistance, Uricase method.*

E Poster Abstracts

Virtual BPCON 2020

A Rare Presentation of Stroke

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ABSTRACT

Cerebral small vessel disease is an important cause of stroke, vascular dementia, cognitive deficit, and mood changes in the elderly. Besides the common sporadic forms, mostly related to age and hypertension, the most common is cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). *NOTCH3* (*Notch homolog 3*), the gene involved in CADASIL, encodes a transmembrane receptor primarily expressed in systemic arterial smooth muscle cells. Mutations in chromosome 19 causes the characteristic CADASIL. MRI showed slightly variable pattern of ischaemic white-matter lesions. It is often misdiagnosed.

We present a case of 45 years old female with complaints of severe headache and altered sensorium. On further enquiry, patient complained of hallucinations, cognitive deficits for an year. Past history had a transient ischemic attack during pregnancy. Her mother had history of dementia and sudden death. Patient is a known hypertensive on irregular treatment. Blood pressure was 210/110 mm of Hg. Mini mental state examination showed scoring of 18/30. Patient developed weakness in the limbs. Neurological imaging showed CADASIL-like features supported by skin biopsy and other investigations.

Antiplatelets, antihypertensives and other symptomatic therapy was given to the patient. Lifestyle modifications, screening of the other family members was done. Patient improved symptomatically.

It is known that hypertension is the most common cause and trigger for stroke occurrence, but conditions like CADASIL controlling blood pressure is important in order to prevent complications.

Effect of Mode of Use of Salt in Cooking During Hypertension

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ABSTRACT

Hypertension exerts a staggering worldwide burden on human quality of life and health care system resources via contribution to increased mortality and risk of cardiovascular diseases such as myocardial infarction, angina pectoris, heart failure, and stroke. Dietary modifications have been widely regarded as a lifestyle modification strategy with enormous potential for preventing hypertension at a cost that is often less than current pharmacologic interventions. One of a factor in the above is less intake of sodium. Avoiding significant

limitations related to difficulty in assessment of sodium intake and confounding, multiple meta-analyses and systematic reviews of RCTs have shown a strong positive association between sodium intake and systolic BP and a significant reduction in systolic BP with sodium restriction. High sodium consumption (>2 grams/day, equivalent to 5 g salt/day) and insufficient potassium intake (less than 3.5 grams/day) contribute to high blood pressure and increase the risk of heart disease and stroke according to WHO. A reduction in dietary salt from the current intake of 9-12 g/day to the recommended level of less than 5-6 g/day will have major beneficial effects on cardiovascular health along with major healthcare cost savings around the world. Salt, mainly known as table salt, is an ionic compound made of sodium and chloride ions with the chemical form of NaCl. Salt has many roles in food. It acts as flavouring agent, acts as a preservative and helps in processing of different foods. In order to use salt in food for hypertensive patients, it should not be added during preliminary preparation of food and also not at the table. For solubility point of view, NaCl solubility remains flat with rise in temperature so we have to stir a lot for even addition or leave the dish for some time. During cooking its even addition is possible rather than at the table as the flavour will be different. Due to property of polarity of NaCl use with liquid component may be fine but for cooked dry food and solid food salt will not be able to penetrate well when added at the table. So chances of consumption will be more which is not advisable for hypertensive patients. For Hypertensive patients, other forms of salts can be used and use of cooking method like grilling, sautéing, boiling etc can be advised to make the food flavourful.

Keywords: Salt, Cooking, Hypertension

Awareness and Attitude of People on Consumption of Street Foods Rich in Salts and Spices and its Impact on Health Parameters before and after Educational Intervention in Urban and Rural Areas of Lucknow (India)

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ABSTRACT

Objective: To observe the behavior of the general public towards consumption of street foods rich in salts and spices and its impact on different parameters of health, in urban and rural areas of Lucknow (Uttar Pradesh) **Method:** Longitudinal Study. **Setting:** As per the requirement of the research, adults were surveyed in the city to gather data about awareness and attitude on street foods rich in salts and spices through a developed questionnaire which was divided in different sections including- a) General Information, and b) attitude and awareness regarding salty street food and its impact on health. Study was conducted among different areas of the city covering rural

and urban. Total 200 people were surveyed in this study including 100 each from urban and rural areas through purposive sampling technique. Intervention was given through behavior modification via Pamphlet distribution in urban and mass counseling and one one-on-one counseling in rural areas. **Result:** Majority (91%) of the subjects in rural area were consuming salty and spicy street foods in rural areas before the intervention which decreased to (79%) after the behavioral intervention. Similar observation was found in urban areas. There was a significant ($p < 0.05$) positive change in majority of people's attitude and awareness regarding impact of consuming street foods rich in salts and spices on the different health parameters, from before to after intervention in rural and urban areas. **Conclusion:** It has been concluded that people from rural areas of Lucknow majorly are consuming salty and spicy street foods daily, which could be limited through proper awareness and behavioral modification programme regarding salts and spices present in street foods and how it is associated with lifestyle diseases among people. **Significance of study:** The results of the study will be of great benefit to the students who are associated with the research and development in the related field or are looking for the same, in the field of Public health and community nutrition. The data will give them an idea about the perception of general public regarding street food which apparently will make them take more interest in it to do more by developing more strategies as an intervention and exploring the different parameters influencing people to consume street food.

Keywords: Street Foods, Awareness, Education, Intervention, Health

Study of Endothelial Dysfunction by Flow Mediated Vasodilation in Individuals with Asymptomatic Hyperuricemia

Prerit Joshi, Vaibhav Shukla, Jalees Fatima, Ankit Varshney

ABSTRACT

Introduction: Asymptomatic hyperuricemia is a condition where the serum uric acid levels are elevated but the individual does not have any sign or symptoms of gout or renal stones. There are studies that show an association of hyperuricemia with endothelial dysfunction thus increasing the cardiovascular risk in these individuals. We therefore undertook this study to find endothelial dysfunction in individuals of asymptomatic hyperuricemia.

Methodology: This was a case-control study where 40 individuals with asymptomatic hyperuricemia and 40 age and sex-matched healthy controls with normal serum uric acid levels were included. Endothelial function was studied by flow-mediated vasodilation in the brachial artery

Results: The mean age of cases was 45.03 ± 16.44 years while that of control subjects was 44.70 ± 14.31 . There were 22 females and 18 males among the cases while there were 24 females and 16 males among the controls. The mean serum uric acid level was 7.27 ± 1.13 mg% while that of controls was 4.52 ± 1.05 mg%.

Table 1: Brachial artery diameter and FMD values in cases and controls.

Parameters	Group I (n=40)		Group II (n=40)		Student 't' test	
	Mean	SD	Mean	SD	't'	'p'
Baseline brachial artery diameter (in mm)	3.87	0.38	3.69	0.33	2.238	0.028
Post-deflation brachial artery diameter (in mm)	4.08	0.38	3.97	0.36	1.301	0.197
Change in brachial artery diameter (in mm)	0.21	0.05	0.28	0.06	-5.687	<0.001
FMD (%)	5.57	1.39	7.73	1.56	-6.507	<0.001

Conclusion: The present study showed that significant endothelial dysfunction is present in individuals with asymptomatic hyperuricemia in comparison to healthy age and sex-matched controls.

Hypertension and Dash Diet: A Systemic Review

Anjali Singh

ABSTRACT

Hypertension is the major cause of cardiovascular diseases and death in the world. Hypertension is the most prevalent non-communicable disease in India. Overall prevalence for hypertension in India was 29.8%. DASH refers to Dietary Approaches to Stop Hypertension. The DASH diet is a healthy eating lifelong strategy that's designed for hypertension management. The DASH diet seeks to encourage reducing dietary sodium and eating a variety of nutrient-rich foods that help in lowering BP, such as potassium, magnesium and calcium. Previous research studies reported that DASH diet may also aid in weight reduction and lowers risks of cancer, **metabolic syndrome, type 2 diabetes and heart diseases**. However most of the DASH-related research has been done in USA and secondly in Iran, since in India DASH diet awareness seems to be low. Hence in India, treatment with DASH and control through DASH statuses are found to be low. The key fact is that this diet needs to be promoted as routine in patient care by healthcare personnel's such as physicians, nurses and dietitians to increase the awareness of DASH diet among public. It is considerable as the dietary pattern of DASH can easily be adopted by all demographic groups and is cost-effective in prevention (primary and secondary) of the raised BP and its complications. The review aims to promote DASH diet and its awareness in Indians to perform clinical trials from Indian perspective as it may be an easy and effective way to reduce blood pressure.

Keywords: Hypertension, Dietary Approaches to Stop Hypertension, Hypertension management, Awareness of DASH diet.

Varied Clinico-haematological Presentations of Patients of Megaloblastic Anaemia with Deficiency of Vitamin B12 and Folic Acid in a Tertiary Care Center of Northern India.

Tushar Tyagi, Jalees Fatima, Zeba Siddiqi, Riyaz Mehdi

ABSTRACT

Introduction:

- Megaloblastic anaemia is caused by vitamin B12 and/or folic acid deficiency.
- Clinically megaloblastic anaemia may present as a continuum of asymptomatic metabolic abnormalities ranging to life-threatening clinical syndrome.
- Patients with megaloblastic anaemia have a risk of developing many complications.

Aim: The aim of present study was to evaluate the varied clinico-haematological presentation of patients of megaloblastic anaemia associated with deficiency of vitamin B12 and folic acid.

Material & Methods: This cross-sectional study was carried out in the Department of Pathology, Era's Lucknow Medical College and Hospital, Lucknow, Uttar Pradesh, India, over a period of 18 months.

- We studied 90 cases which were grouped as follows:
Group A: no deficiency
Group B: vitamin B12 deficiency
Group C: folic acid deficiency
Group D: combined deficiency.
- Complete blood count was done using Sysmex XS-800i. Vitamin B12 and folic acid assay was done using Enzyme-Linked Immunosorbent Assay (ELISA). Bone marrow aspiration was also done.

Results:

- Out of 90 patients, maximum (n=42; 46.7%) had vitamin B12 deficiency. In all four groups, weakness and fatigue were the most common complaints.
- All the cases had pallor. Icterus, tingling, numbness and murmurs were relatively rare.
- All the fourteen cases in which bone marrow examination was carried out had erythroid hyperplasia and megaloblastic reaction.

Conclusion:

- On the basis of above findings, it was concluded that there is a significant difference in the clinical presentation of patients of megaloblastic anaemia with vitamin B12 and folic acid deficiency.
- However, not very significant difference has been noticed in the haematological parameters. Thus, clinical and haematological profile both should be thoroughly assessed to differentiate between vitamin B12 and folic acid deficiency.

Arterial Stiffness Index (ASI) and Carotid Femoral Pulse Wave Velocity (cf – PWV) Using Cold Pressor Test (CPT) in normal BMI and different grades of obesity

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ABSTRACT

Introduction: In the modern world, obesity has reached a global epidemic emerging as *new world syndrome* affecting all age groups, all populations of developing and developed countries.

Simran Grewal VG. Effect of obesity on autonomic nervous system. Int J Cur Bio Med Sci. 2011. Available from: <http://cogprints.org/7314/>

Obesity is due to an imbalance between energy intake and expenditure due to complex multifaceted interactions among genetic, physiological, behavioral, endocrine, nervous, metabolic and environmental factors, contributing to the pathogenesis of cardiovascular diseases, sleep apnea and diabetes predominantly.

Increased cardiovascular reactivity to the cold pressor test (CPT), a known sympatho-excitatory stimulus, predicts the future development

of hypertension, and may represent a preclinical manifestation of hypertension before elevations in peripheral arterial blood pressure (BP) are detected.

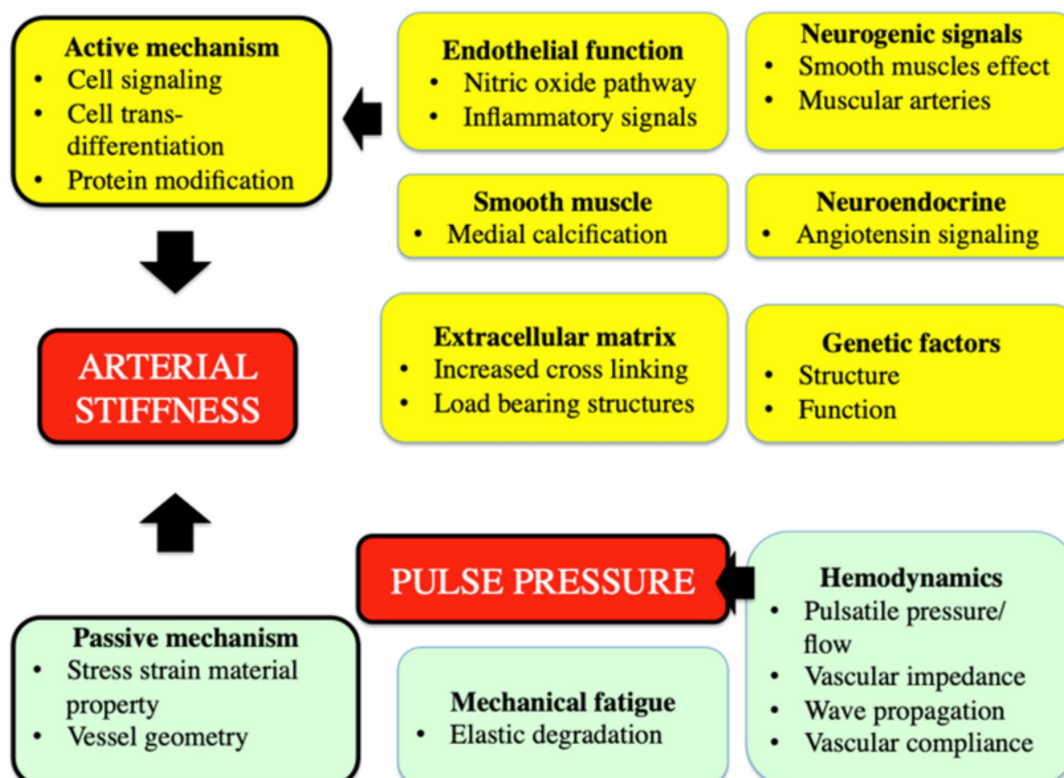
Bellinazzi VR *et al.* studied and evaluated carotid-femoral pulse wave velocity (PWV) and found that BP response to CPT was directly related to long-term increase in PWV in men and proposed increased sympathetic reactivity predicts future increases in aortic stiffness.

Aim: This study is aimed to-

- Establish the relation between arterial stiffness and body mass index as an early predictor of cardiovascular disease.
- Comparative evaluation of baseline arterial stiffness represented by carotid femoral pulse wave velocity and arterial stiffness index (ASI) and possible changes during sympatho-excitatory stress response in different BMI groups.

Exclusion Criteria

- Persons with history of smoking.
- History of Diabetes mellitus, angina, arrhythmia, myocardial ischemia.
- Peripheral ischemic disease with documented claudication.
- History of Neurological diseases.
- Female in Menstrual phase.
- Persons with deranged thyroid profile
- Persons not providing consent to participate in the study.



Observations: The mean cf-PWV before CPT was 689.48 ± 225.21 cm/sec, 736.15 ± 199.41 cm/sec and 747.20 ± 105.99 cm/sec, respectively, during CPT was 735.98 ± 317.60 cm/sec, 764.30 ± 195.24 cm/sec and 774.12 ± 101.98 cm/sec, respectively and after CPT was 674.28 ± 250.43 cm/sec, 760.56 ± 218.71 cm/sec and 754.16 ± 126.10 cm/sec, respectively.

Two sample t-test with equal variance was conducted to determine the difference between the mean value of cf-PWV among normal BMI, Overweight and Obese groups. None of the comparison groups show statistically significant differences. Normal BMI group had statistically indifferent values during and after CPT, both ($p > 0.05$), despite the greatest net increase in the cf-PWV during the CPT. Whereas overweight and obese group have a statistically significant increase in the cf-PWV during the CPT (< 0.05) and a statistically insignificant increase in the cf-PWV after CPT ($p > 0.05$). The mean ASI before CPT was 42.26 ± 9.81 , 42.32 ± 6.30 and 44.84 ± 8.74 respectively, during CPT was 47.28 ± 8.63 , 45.78 ± 5.67 and 47.53 ± 8.54 respectively and after CPT was 37.30 ± 7.35 , 39.32 ± 7.07 and 38.08 ± 10.12 , respectively.

Two sample t-test with equal variance were conducted to determine the difference between the ASI among normal BMI, Overweight and Obese groups. None of the comparison groups show statistically significant differences. All the groups were statistically significantly different during the CPT and after the CPT, with significant increase during the CPT, maximally in the Normal BMI group and a significant fall in ASI after CPT maximally in the Obese group.

Discussion: In our study, the baseline cf-PWV and ASI were found directly proportional to the BMI of the subject groups. It was in accordance to the previous studies proposed by Rider *et al.*, who postulated a direct correlation between PWV and BMI and Recio-Rodriguez *et al* who found that an increase in BMI of 1-kg/m^2 led to an increase of 0.052 m/s in PWV, corresponding to about six months of vascular aging. The application of the CPT caused significant increase in cf-PWV and ASI of the overweight and obese group and a net change in the higher BMI groups as depicted by Borner *et al.* Similar data were observed by Park J *et al.*, Kaflon R, Kini SG and Wani PD. Though, Garg *et al.* and Grewal S hold the counter-positions.

Conclusion:

- Even the modest weight gain causes increase in the arterial stiffness (may be due to inflammatory and neuro humoral changes). Though, proportionately smaller increase in arterial stiffness in higher BMI groups, exposure to cold may cause unsafe zone of ischemic events.
- Cold pressure test can be employed as a preliminary test in the early stages in susceptible individuals to cardiovascular risks, after establishing their cardiovascular fitness, to know their sympathetic reactivity.

Limitation:

- No analysis was done according to the sex of the study subjects.
- Duration of weight gain and obesity was not taken in account.
- Composition and the structural analysis of the vessel wall were not assessed.
- Study groups were not divided into visceral and peripheral obesity groups.

Future Perspectives:

- Studies to evaluate duration of the weight gain and obesity and correlation to the real-time biochemical and inflammatory markers, simultaneously.
- Studies to evaluate mechano-structural changes and correlation to duration of weight gain.

Association of Renalase Gene Polymorphism in Patients of Hypertension with or without Type 2 Diabetes Mellitus

Akhilesh Bandhu Gupta, Fatima J, Karoli R, Sharma R, Raza T, Arora R

ABSTRACT

Introduction: Renalase is described as a novel protein produced by the kidneys, a novel flavin adenine dinucleotide (FAD) dependent amine oxidase with its gene having 9 exons spanning approximately 3,11,000 base pairs and resides on chromosomes 10 at q23.33[1] in 2007, secreted into the blood stream and participate in the metabolism of circulating catecholamines.

Single nucleotide polymorphisms (SNPs) of Renalase gene have been described recently. SNPs rs2576178 GG and rs2296545 CC genotypes have been found to be associated with essential hypertension. The polymorphism is shown to result in abnormal gene expression affecting enzymatic activity of Renalase. Low Renalase expression correlating with increased plasma norepinephrine, systolic blood pressure and proteinuria suggests that Renalase plays an important role in catecholamine metabolism and is involved in development of hypertension and decreased cardiovascular function. Renalase gene is primarily involved in regulation of hypertension and its polymorphism has been shown to be associated with hypertension.

Aim: To analyze the association of two polymorphisms (rs2576178 and rs2296545) of the Renalase gene in patients of hypertension, with or without type 2 Diabetes mellitus having normal kidney function.

Objectives: To assess polymorphism of Renalase gene (rs2576178 and rs2296545) in hypertension patients with and without type 2 diabetes mellitus. To compare Renalase gene polymorphism in above groups with or without incipient nephropathy having normal kidney function in patients of hypertension.

Type of Study: Case-control study

Inclusion criteria:

- Patients having hypertension $> 140/90$ mmHg or on antihypertensive medications.

Exclusion criteria:

- Patients with hepatic disease and heart failure.
- Patients with renal stones
- Patients with acute renal dysfunction.

- Patients of age >65yrs to minimize the effect of age-related gene denaturation.
- Pregnant females.

Material & Methods:

- Study groups: Study was done in three groups
- GROUP I – all patients of hypertension (JNC 8) [16] with type 2 diabetes mellitus (according to ADA criteria) having normal kidney function.
- GROUP II – all patients of hypertension without type 2 diabetes mellitus having normal kidney function.
- Group III – age and sex-matched healthy controls.
- (Groups I and II belong to patients who may or may not have nephropathy.)
- The sample size $n=80$ each group.
- Statistical analysis was performed using chi-square (X^2) test and different variables were compared by using analysis of variance (ANOVA) in between the groups.

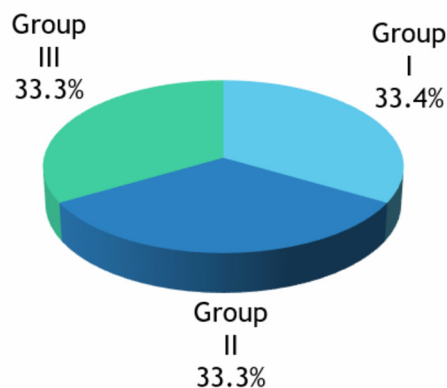
DNA Isolation-

- Five milliliters of blood was collected in 0.5M EDTA tubes from all the subjects. Genomic DNA was isolated from collected blood using the phenol-chloroform DNA extraction method [14]. The purity of DNA was checked on Nanodrop spectrophotometer and finally the isolated DNA samples will be stored at -20°C .
- Analysis of Polymorphisms
- Genotypes for two SNPs (rs2576178, rs2296545) in the Renalase gene region was determined by the PCR-RFLP method.
- The following primers were used: for rs2296545 forward 50'-GGAAGTCCCCGATCACGTGAC-30 and reverse 50'-T GCTGTGTGGGACAAGGCTGA-30; for rs2576178 forward 50'-AGCAGAGAAGCAGCTTAACCT-30 and reverse 50'-TTATCTGCAAGTCAGCGTAAC-3.
- Genomic DNA (200 ng) was amplified in a final volume of 30 μl , containing 10 mM TRIS pH 8.3, 50 mM KCl, 1.5 mM MgCl_2 , 200 μM each dNTP, 1 μM of each primer and 2 U Taq polymerase.
- The initial denaturation was performed at 95°C followed by 35 cycles of denaturation at 94°C , annealing at 60°C , extension at 72°C , 1 min. each and a final extension at 72°C for 7 min.
- The PCR products (10 μl) was digested for 6–10 h with 5 U of Eco81 I, and Msp I restriction endonucleases, respectively (MBI Fermentas) at 37°C . Fragments were analyzed on 2.5% agarose gel.

Results:

Table 1: Group wise Distribution of Study Population

Group	Description	No. of patients	Percentage
Group I	Hypertensive with Type 2 DM	80	33.33
Group II	Hypertensive without Type 2 DM	80	33.33
Group III	Controls	80	33.33



Observation: The genotypes of two renalase gene polymorphisms: rs2576178 GG, and rs2296545 CC were determined in 80 hypertensive patients with type 2 diabetes, 80 hypertensive patients without type 2 diabetes and 80 healthy individuals. The results showed that after confounding effects of age, gender, BMI and lipid profile were adjusted, the renalase rs2576178 genotype was significantly and independently associated with hypertension in diabetic patients. The frequency of the G allele of rs2576178 polymorphism was also higher in diabetes patients with hypertension and only hypertensive patients than in controls. This suggests that the G allele of this polymorphism is also associated with susceptibility to hypertension.

The frequency of the CC alleles of rs2296545 was higher in the diabetic hypertensive group and hypertensive group in comparison with control groups.

Discussion: Li *et al.* [10] in 2005, described a multiple-step mechanism regulating Renalase synthesis and secretion. The increased concentration of catecholamines, with a subsequent increase in systolic blood pressure (SBP), seemed to be the key factor stimulating the activation of Monoamine oxidase-C. A recently published study reported the association of the Renalase gene polymorphisms with essential hypertension (Zhao *et al.* 2007).

The authors examined eight single nucleotide polymorphisms (SNPs) of the Renalase gene among 1,317 hypertensive individuals and 1,269 normotensive controls from the International Collaborative Study of Cardiovascular Disease in Asia. Two of the analyzed SNPs were significantly associated with essential hypertension. These results support the theory that Renalase plays an important role in the development and maintenance of hypertension.

Conclusion: rs2576178 and rs2296545 polymorphisms were significantly associated with hypertension with and without diabetes irrespective of incipient nephropathy status.

References:

- [1] J. Coresh, E. Selvin, L. A. Stevens, J. Manzi, J. W. Kusek, P. Eggers, *et al.*, "Prevalence of Chronic Kidney Disease in the United States," *Journal of the American Medical Association*, Vol. 298, No. 17, 2007, pp. 2038-2047.
- [2] Q. L. Zhang and D. Rothenbacher, "Prevalence of Chronic Kidney Disease in Population-Based Studies: Systematic Review," *BMC Public Health*, Vol. 8, 2008, pp. 117.

Table 2: Intergroup Comparison of Demographic Variables

		Group I (n=80)		Group II (n=80)		Group III (n=80)	
		No.	%	No.	%	No.	%
Age Group (years)							
≤20	2	1	1.25	0	0.00	1	1.25
21-30	7	0	0.00	3	3.75	4	5.00
31-40	33	8	10.00	9	11.25	16	20.00
41-50	63	21	26.25	22	27.50	20	25.00
<u>51-60</u>	<u>84</u>	<u>35</u>	<u>43.75</u>	<u>27</u>	<u>33.75</u>	<u>22</u>	<u>27.50</u>
61-65	51	15	18.75	19	23.75	17	21.25
		χ²=11.806 (df=10); p=0.298					
Min-Max (Median)	15-65 (55)	18-65 (55)		28-65 (55)		15-65 (50)	
Mean±SD	52.02± 10.44	53.52±8.84		52.71±10.58		49.83±11.50	
Gender							
Female	120	46	57.50	34	42.50	40	50.00
Male	120	34	42.50	46	57.50	40	50.00
		γ²=3.600(df=2); p=0.165					

Table 3: Intergroup Comparison of Nutritional Status (BMI)

	Total (N=240)	Group I (n=80)		Group II (n=80)		Group III (n=80)	
		No.	%	No.	%	No.	%
Nutritional Status							
Underweight	11	3	3.75	6	7.50	2	2.50
Normal	137	37	46.25	49	61.25	51	63.75
Overweight	62	23	28.75	14	17.50	25	31.25
Obese	30	17	21.25	11	13.75	2	2.50
		$\chi^2=11.806$ (df=10); p=0.298					
Min-Max (Median)	14.15- 46.20	18.14-46.20 (25.04)		14.15-40.95 (22.47)		17.15-36.51 (23.45)	
Mean±SD	24.52± 5.15	26.02±5.97		23.86±5.36		23.67±3.52	

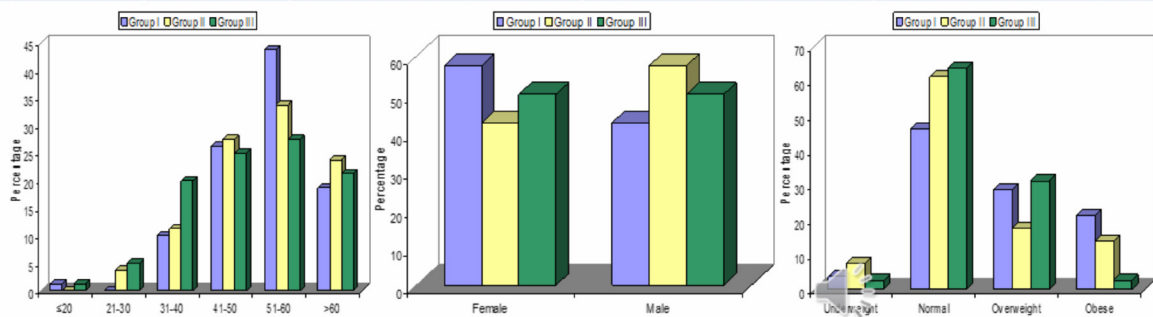
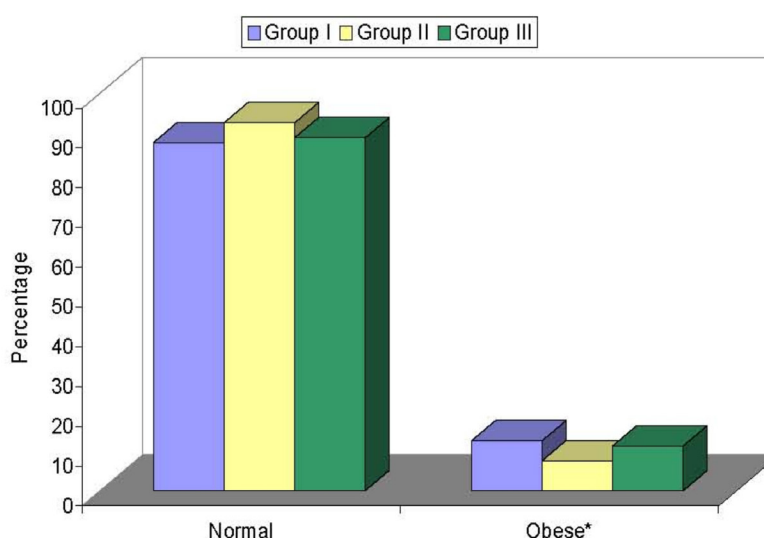


Table 4: Intergroup Comparison of Abdominal Obesity (Waist circum)

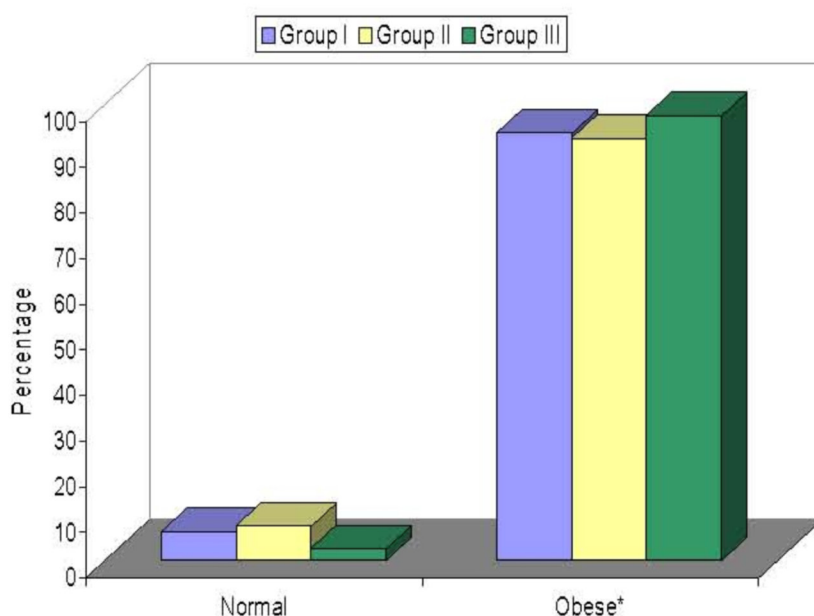
	Total (N=240)	Group I (n=80)		Group II (n=80)		Group III (n=80)	
		No.	%	No.	%	No.	%
Normal	215	70	87.50	74	92.50	71	88.75
<u>Obese*</u>	<u>25</u>	<u>10</u>	<u>12.50</u>	<u>6</u>	<u>7.50</u>	<u>9</u>	<u>11.25</u>
$\chi^2=1.161(df=2); p=0.560$							
Min-Max (Median)	35-125 (67.00)	36-114 (61.50)		35-125 (56.00)		53-110 (79.00)	
Mean±SD	69.59± 18.80	68.50±18.94		61.82±19.14		78.45±14.23	



- [3] M. K. Haroun, B. G. Jaar, S. C. Hoffman, G. W. Comstock, M. J. Klag and J. Coresh, "Risk Factors for Chronic Kid- ney Disease: A Prospective Study of 23,534 Men and Women in Washington Country, Maryland," Journal of the American Society of Nephrology, Vol. 14, No. 11, 2003, pp. 2934-2941.
- [4] Milani M, Ciriello F, Baroni S, Pandini V, Canevari G, Bolognesi M, Aliverti A: FAD-binding site and NADP reactivity in human renalase: a new enzyme involved in blood pressure regulation. J Mol Biol2011;411:463-473.
- [5] Zbroch E, Koc-Zorawska E, Malyszko J, Malyszko J, Mysliwiec M: Circulating levels of renalase, norepinephrine, and dopamine in dialysis patients. Ren Fail 2013;35:673-679.
- [6] Xu J, Li G, Wang P, Velazquez H, Yao X, Li Y, Wu Y, Peixoto A, Crowley S, Desir GV: Renalase is a novel, soluble monoamine oxidase that regulates cardiac function and blood pressure. J Clin Invest 2005;115:1275-1280.
- [7] Hennebry SC, Eikelis N, Socratous F, Desir G, Lambert G, Schlaich M: Renalase, a novel soluble FADdependent protein, is synthesized in the brain and peripheral nerves. Mol Psychiatry 2010;15:234-236.
- [8] Fedchenko V, Globa A, Buneeva O, Medvedev A: Renalase mRNA levels in the brain, heart, and kidneys of spontaneously hypertensive rats with moderate and high hypertension. Med Sci Monit Basic Res2013;19:267-270.

Table 5: Intergroup Comparison of Central Obesity (WH Ratio)

	Total (N=240)	Group I (n=80)		Group II (n=80)		Group III (n=80)	
		No.	%	No.	%	No.	%
Normal	13	5	6.25	6	7.50	2	2.50
<u>Obese*</u>	<u>227</u>	<u>75</u>	<u>93.75</u>	<u>74</u>	<u>92.50</u>	<u>78</u>	<u>97.50</u>
		$\chi^2=2.115(df=2); p=0.347$					
Min-Max (Median)	0.75-2.29 (0.97)	0.84-1.92 (0.95)		0.75-2.29 (0.92)		0.84-1.24 (1.07)	
<u>Mean±SD</u>	1.03± 0.20	1.03±0.20		1.04±0.26		1.04±0.08	



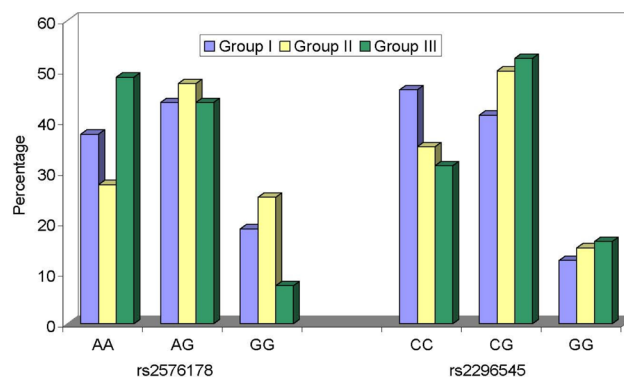
- [9] Boomsma F, Tipton KF. Renalase, a catecholamine-metabolising enzyme? J Neural Transm 2007; 114: 775-776.
- [10] Luft FC. Renalase, a catecholamine-metabolizing hormone from the kidney. Cell Metab 2005; 1: 358-360
- [11] Desir GV. Renalase deficiency in chronic kidney disease, and its contribution to hypertension and cardiovascular disease. Curr Opin Nephrol Hypertens 2008; 17: 181-185.
- [12] Li G, Xu J, Wang P, Velazquez H, Li Y, Wu Y, et al. Catecholamines regulate the activity, secretion and synthesis of renalase. Circulation 2008; 117:1277-1282.
- [13] Rampersaud E, Damcott CM, Fu M, Shen H, McArdle P, Shi X, et al. Identification of novel candidate genes for type 2 diabetes from a genome-wide association scan in the old order Amish: evidence for replication from diabetes-related quantitative traits and from independent populations. Diabetes 2007; 56:3053-3062.

Table 6: Intergroup Comparison of Biochemical Variables

	Group I (n=80)		Group II (n=80)		Group III (n=80)		ANOVA	
	Mn	SD	Mn	SD	Mn	SD	F	p
<u>Cholestrol</u>	166.45	49.22	156.05	48.17	142.23	46.02	5.166	<u>0.006</u>
<u>TG</u>	198.53	102.15	165.49	68.42	165.90	95.78	3.551	<u>0.030</u>
<u>Urea</u>	34.07	9.87	33.30	11.09	30.49	8.50	2.915	<u>0.056</u>
<u>Creatinine</u>	0.92	0.28	0.91	0.25	0.91	0.25	0.027	<u>0.973</u>

Table 7: Intergroup Comparison of Renalase Gene Polymorphism

	Total (N=240)	Group I (n=80)		Group II (n=80)		Group III (n=80)	
		No.	%	No.	%	No.	%
rs2576178							
AA	91	30	37.5	22	27.5	39	48.75
AG	108	35	43.75	38	47.5	35	43.75
GG	41	15	18.75	20	25	6	7.5
		$\chi^2=12.30(df=4)$; p=0.015 (Sig)					
rs2296545							
CC	90	37	46.25	28	35	25	31.25
CG	115	33	41.25	40	50	42	52.5
GG	35	10	12.5	12	15	13	16.25
		$\chi^2=4.17(df=4)$; p=0.384(Not Sig)					



[14] Sambrook J, Frisch EF, Maniatis T, Editors. Molecular cloning; a laboratory manual. 2nd ed New York: Cold Sping Harbor Labortory Press. 1989. p. 9.14-9.19.

[15] Ahlawat A S, Gupta S, Kapoor S, Kar P. renalase gene polymorphism rs2576178 GG and rs 2296545 CC. Open journal of nephrology, 2012, 2, 136-143.

[16] Hypertension criteria reference James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults. report from the panel members appointed to the Eighth Joint National Committee (JNC 8). JAMA 2013 Dec 18. doi:10.1001/jama.2013.284427.

Title: Association of blood pressure in Diabetic retinopathy patient with or without cataract

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ABSTRACT

Introduction: India is considered the diabetes capital of the world. A significant proportion of patients undergoing cataract surgery under the age of 50 are diabetics. Cataract surgery in DR patients increase chances of retinal detachment, vitreous hemorrhage and induce iris neovascularisation. Ultimately leads to permanent vision loss compared to temporary loss due to cataract. Studies shows that hypertension cause increase in inflammatory cytokine such as IL-6, TNF- α and CRP. cataract is closely associated with severe systemic inflammation due to HTN. HTN thus increases the risk of cataract formation in diabetics at an earlier age as a result of the additive effect.

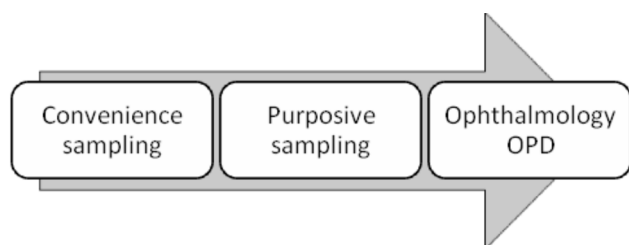
Hypothesis: Blood pressure is not significantly different among diabetic retinopathy patients with or without cataract.

Aim: To find the correlation of blood pressure with Diabetic cataract

Objective: To determine the effect of Blood pressure in Diabetic retinopathy patients with cataract compared to those without cataract.

Material & Methods:

Sampling:



Sample size:

- Equation for Sample size $n = \frac{DEFF \cdot Np(1-p)}{(d^2/Z^2 \cdot 1 - \alpha/2)^2 \cdot (N-1) + p(1-p)}$
- For unknown population size and frequency for diabetes*.118
- Using OpenEpi software version 3.0 at 5 % error margin and 95 % confidence interval, the total sample size calculated was 159
- We will try to collect data of 500 sample with 100 control

Diabetic retinopathy (DR) (N=184)	
DR without cataract (n=84)	DR with cataract (n=76)

Inclusion Criteria:

- Age 40-60 years
- Diabetic retinopathy patient with or without cataract
- HbA1C between 6.5 -7.0 mmol/mol

Exclusion Criteria:

- Any condition or drug affecting lipid profile
- Chronic liver disease
- Chronic alcoholic
- Chronic kidney disease

After fundus examination and overnight fasting subjects are called next day in the morning hours for BP measurements; by automated HEM-7080IC; Omron

The same BP-determination algorithm and components as the HEM-705IT are used in the HEM-7080IC to satisfy the British Hypertension Society protocol's criteria. After that 3 mL venous blood collected for HbA1C in plain vial in central lab of biochemistry

Result	Diabetic retinopathy (DR) (N = 184)		P-value*
	Without cataract (n=84)	With cataract (76)	
Height	166.6 $\pm$ 6.0	168.0 $\pm$ 5.0	0.11
Weight	77.6 $\pm$ 6.2	79.2 $\pm$ 6.3	0.10
BMI	27.4 $\pm$ 1.6	27.8 $\pm$ 1.3	0.08
Age	55.1 $\pm$ 4.4	55.7 $\pm$ 2.7	0.30
HbA1C Mmol/mol	6.7 $\pm$ 0.8	6.6 $\pm$ 1.1	0.50
BP (mmHg)	136 $\pm$ 8.1	141 $\pm$ 5.6	0.0001

*p value < 0.05 will be considered as statistically significant for association between 2 variables.

Discussion:

Yu X et al. A meta-analysis based on 25 studies (2014)

- 9 cohort (RR 1.08; 95% CI: 1.05-1.12)
- 5 case-control (OR 1.28; 95% CI: 1.12-1.45)
- 11 cross-sectional

Conclusion: The present study shows that higher BP is significantly associated with cataract in diabetic retinopathy subject. Also, the Earlier development of cataract occur in DR patient with hypertension. Based on above finding we can delay the development of cataract by strict control of BP to avoid the complication of cataract surgery.