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This is to certify that Dr. Abha Gupta attended the workshop on *"Teaching Learning Media and Assessment in Medical Education"* from 11th May, 2001 to 13th May 2001 conducted by *Himalayan Institute of Medical Sciences, Jolly Grant, Dehradun.*

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No.014/CISP-III-2025/011

CURRICULUM IMPLEMENTATION SUPPORT PROGRAM - III

This is to certify that

Dr **Abha Gupta**, bearing registration number **039152**

of **Uttar Pradesh** Medical Council, from **Lala Lajpat Rai Memorial** Medical College,

Meerut (UP) has attended the **Curriculum Implementation Support Program III**

Conducted by NMC Regional/Nodal Centre **Maulana Azad Medical College,New Delhi**

from **30-01-2025** to **31-01-2025** at **Maulana Azad Medical College, New Delhi**

Convener Regional Centre

Dean / Principal

ORIGINAL ARTICLE

JIACM 2025; 26 (4): 181-85

Correlation of Neutrophil- to-Lymphocyte Ratio with Functional Ability in COPD Patients

Abha Gupta, Shweta Sharma*, Ansuk Shukla**, Santosh Mittal***, SKK Malik****, Seema Jain******

Abstract

Introduction: *Chronic Obstructive Pulmonary Disease (COPD) remains a leading cause of illness and death worldwide, especially in low- and middle-income countries like India. It is marked by chronic respiratory symptoms and progressive airflow obstruction. In recent years, systemic inflammation has gained recognition as a central factor in COPD progression. Among inflammatory markers, the neutrophil-to-lymphocyte ratio (NLR) has emerged as a potential indicator of disease severity and prognosis. This study aimed to evaluate the relationship between NLR and clinical, radiological, and functional parameters in patients with stable COPD.*

Methods: *A cross-sectional study was conducted at LLRM Medical College and SVBP Hospital, Meerut, during 2023 – 2024. Sixty-one stable COPD patients aged 35 years or older were enrolled based on post-bronchodilator $FEV_1/FVC < 70\%$ and absence of exacerbation in the prior two months. All patients underwent clinical assessment, spirometry, six-minute walk test (6MWT), chest imaging, and laboratory tests including complete blood count and CRP. NLR was calculated and correlated with clinical indices, GOLD stage, and BODE index.*

Results: *The mean age was 64.2 years, and 72% were male. The average NLR was 4.36. Most patients were in GOLD 3 category. NLR showed a negative correlation with FEV_1, FEV_1/FVC, 6MWT distance, and SpO, and a positive correlation with CRP and BODE index. NLR levels increased consistently with GOLD stage ($p < 0.001$).*

Conclusion: *NLR appears to be a simple, cost-effective marker that correlates well with COPD severity and functional decline. It may aid in risk stratification and clinical decision-making.*

Key words: *Chronic obstructive pulmonary disease, neutrophil-to-lymphocyte ratio.*

ORIGINAL RESEARCH PAPER

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INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

25OH CHOLECALCIFEROL LEVELS IN HYPERTENSIVE PATIENTS

Medicine

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ABSTRACT

Background- Hypertension is one of the leading causes of the global burden of disease. Elevated blood pressure affects more than one billion individuals (1) and causes an estimated 9.4 million deaths per year. Vitamin D is an essential component of our body. A growing body of evidence suggests that low levels of Vitamin D may adversely affect the cardiovascular (CV) system. **Objective-** To assess the correlation of Vitamin-D levels in hypertensive patients. **Methodology-** The study was conducted including all hypertensive patients admitted in Medicine ward or attending medicine OPD and were on anti hypertensive treatment. Serum 25 OH Cholecalciferol were measured in baseline samples and were assessed. **Result-** Among all study subject who were hypertensive 61.1% were Vit-D deficient while 20.37% had insufficient levels. Rest being normal 18.52%. Vitamin-D deficiency causes inappropriate action of Renin angiotensin Active System that leads to hypertension.

KEYWORDS

Hypertension, 25 OH Cholesterol levels, Vitamin-D, Anti-hypertensive treatment.

INTRODUCTION

Hypertension is one of the leading causes of the global burden of disease. Elevated blood pressure affects more than one billion individuals (1) and causes an estimated 9.4 million deaths per year. Hypertension doubles the risk of cardiovascular diseases, including coronary heart disease (CHD), congestive heart failure (CHF), ischemic and hemorrhagic stroke, renal failure and peripheral arterial disease (PAD) Vitamin D is an essential component of our body. A growing body of evidence suggests that low levels of Vitamin D may adversely affect the cardiovascular (CV) system. Low levels of 25-hydroxyvitamin D (25 OH cholecalciferol) are associated with many markers of CV disease; for example, hypertension, increased vascular resistance, and increased left ventricular mass index (2) . In addition, 25 OH Cholecalciferol levels correlate inversely with coronary calcification, an indicator of atherosclerosis, and a precursor of CV events (3) . Vitamin D acts to modulate toll like receptor signalling, which results in reduces the gene expression and protein release of proinflammatory mediators (4) . Vitamin D, the sunshine hormone was shown to regulate the Renin Angiotensin Aldosteron system at the clinical, pathophysiological and molecular levels in animals and human studies (5,6) Deficient or insufficient serum 25 OH Cholecalciferol levels have been documented in patients with myocardial infarction, heart failure, stroke, diabetic CV disease, and peripheral arterial disease (7-10) . Vitamin D supplement has been shown to improve endothelial functions (11) More than 1 billion people currently are at risk for vitamin D deficiency worldwide (12) Black people absorb more Ultravoilet-B Rays in the melanin of their skin than white people; therefore, black people are more prone to develop vitamin D deficiency. This pandemic of hypovitaminosis D can mainly be attributed to decreased exposure to sunlight (for example, reduced outdoor activities and air pollution)(13-14)

OBJECTIVES:-

To assess the correlation of Vitamin-D levels in hypertensive patients.

MATERIAL AND METHODS

The study was conducted by department of Medicine at LLRM Medical College and SVBP Hospital, Meerut U.P. in 2019-2020. It was a cross sectional study including all hypertensive patients admitted in Medicine ward or attending medicine OPD and were on anti hypertensive treatment. Study subjects included diagnosed Hypertensive patients of both the sex were on that of moderate to severe category. The Blood Pressure of all participants was categorised with moderate to severe category. Study participants were interviewed and detailed history was taken regarding hypertension a detailed personal history including dietary pattern and sunlight exposure was taken. Detailed clinical and physical examination was also done, informed consent was obtained from all the study participants.

Patient's information was collected on a pretested/preformed questionnaire regarding complete socio-demographic & personal profile. Serum 25 OH Cholecalciferol were measured in baseline samples using the immune assay analyzer, CLIA (chemiluminescent immunoassay). Samples were collected in the morning after 8 to 12 hour overnight fast. Samples were stored at-80°C.

INCLUSION CRITERIA-

1. Patient with diagnosed hypertension according to JNC-8 classification of Blood Pressure.

Classification	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
Stage 1 HTN	140-159	90-99
Stage 2 HTN	≥160	≥100

1. Age greater than >18 year
2. Those who gave prior consent for the study and were willing for serum 25 OH cholecalciferol levels.

EXCLUSION CRITERIA-

1. Cases of secondary hypertension suffering from chronic illness such as diabetes mellitus, tuberculosis, chronic kidney disease or coronary and CLD.
2. Participant who had taken Vitamin D supplementation in the last 3 months

Study Design: Cross sectional study Study period September 2019 to January 2020

Sample size: With reference to the study done by Shalini Priya, Abhishek Singh et al. (15) on hypertension in the year 2017, the prevalence was found to be 80. The sample size was calculated taking the confidence interval as 95% with error with 6.29%. Sample size calculated was 162 study subjects of hypertension

RESULTS

In the present study among 162 hypertensive participants, being males 93 (57.4%) and female 69 (42.59%). Majority of the age groups in

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Original Research

To Study Platelet Count/Spleen Diameter (PC/SD) Ratio as A Non-Invasive Marker for Predicting Esophageal Varices in Decompensated Chronic Liver Disease Patients

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Abstract

Objectives –Esophageal varices is a life-threatening complication of decompensated lever disease but requires invasive testing for detection. This study aims to evaluate platelet count/spleen diameter as a non-invasive marker for detecting Esophageal varices in Decompensated chronic liver disease patients.

Materials and Method: This study was conducted at S.V.B.P. Hospital in Meerut, Uttar Pradesh. 100 admitted stable Decompensated chronic liver disease patients were taken for the study.

Results-Among 100 CLD patients (71% male, 29% female), 52% were alcoholic, 47% were HCV positive, and 24% had no alcohol or viral history. Patients with a PC/SD ratio ≤ 909 showed 100% sensitivity and 100% NPV for ruling out esophageal varices but moderate specificity (40.8%) and PPV (63.8%) for ruling in esophageal varices.

Conclusion- The PC/SD ratio is a reliable, non-invasive tool for ruling out esophageal varices in CLD patients, but further research is needed to validate its use across diverse populations.

Keywords- Esophageal Varices, Decompensated chronic liver disease, Platelet Count/Spleen Diameter (PC/SD)

INTRODUCTION

Esophageal varices, resulting from portal hypertension, are a significant complication of cirrhosis, with a prevalence as high as 70% in patients with decompensated cirrhosis, of whom approximately one-third may experience variceal bleeding(1,2).

According to the Baveno VII consensus on portal hypertension, upper gastrointestinal (UGI) endoscopy is recommended for all cirrhotic patients at the time of chronic liver disease (CLD) diagnosis to assess for esophageal varices. In patients with small varices, follow-up UGI endoscopy is suggested every 1–2 years, while those without varices should undergo endoscopy every 2–3 years.(3)

While endoscopy is effective, it is an invasive and often uncomfortable procedure with limited availability and high costs, which can reduce feasibility, especially in patients with comorbidities or financial constraints. This highlights the need for non-invasive, accessible, and cost-effective methods to accurately diagnose esophageal varices.(4)

In this context, the present study aims to examine the relationship between platelet count, spleen diameter, and their ratio in relation to the presence of esophageal varices in cirrhotic patients without prior gastrointestinal bleeding.

AIMS AND OBJECTIVE

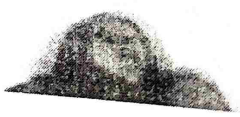
To use Platelet Count/Spleen Diameter (PC/SD) as a non-invasive marker for Esophageal Varices in Decompensated Chronic Liver Disease patients.

MATERIAL AND METHODS

This study was conducted at S.V.B.P. Hospital in Meerut, Uttar Pradesh, over the period from 2022 to 2023 as a cross-sectional, single-center investigation. All participants were admitted to the hospital ward and evaluated. Informed consent was obtained from each patient. A comprehensive history was recorded, with particular attention to factors associated with chronic liver disease (CLD). Detailed general physical and systemic examinations were also performed to identify clinical signs indicative of liver cell failure, including jaundice, palmar erythema, spider nevi, alopecia, and testicular atrophy among others.

Inclusion Criteria

- Age ≥ 18 years



Original Article

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To study socioclinical profile of COVID-19 among health-care workers of tertiary care COVID-19 hospital in the year 2021–2022

Shweta Sharma, Abha Gupta, Gaurav Singh[1], Seema Jain, S. K. K. Malik

Abstract:

INTRODUCTION: COVID-19, caused by SARS-CoV-2, emerged in December 2019 and swiftly became a pandemic by March 2020. Health-care workers (HCWs) face a high risk of infection. Previous epidemics such as SARS, Ebola, and Middle east respiratory syndrome (MERS) highlight these risks. As of January 22, 2021, there were 96.2 million cases and 2 million deaths globally. In India, there were 10.6 million cases and 153,000 deaths by that date. Protecting HCWs and implementing preventive measures in health-care settings are urgent.

AIM AND OBJECTIVE: The aim of this study was to study socioclinical profile of COVID-19 among health-care workers of tertiary care COVID-19 hospital in the year 2021–2022.

MATERIALS AND METHODS: A cross-sectional study at LLRM Medical College (June 2021–June 2022) focused on COVID-19 positive HCWs. Inclusion criteria included HCWs aged 20–50 affiliated with the medical college. Exclusion criteria covered those outside this age range, COVID-19 negative cases, and individuals with diabetes, hypertension, or known respiratory illnesses, ensuring a specific study cohort.

RESULTS AND OBSERVATION: Among the 51 positive cases, the majority were aged 25–30 (60.8%) and male (56.9%), with statistical significance. This aligns with previous research indicating that most cases were in the 26–35 years of age group (43.1%) and predominantly female. Junior residents (52.9%) and interns (27.5%) were the most affected. Gastrointestinal (GI) symptoms were uncommon (21.6%), and 78.4% had normal oxygen saturation. Symptom severity correlated with age: mild symptoms in 56.7% (25–30 years), moderate in 70% (25–30 years), and severe in 100% (35–40 years).

CONCLUSION: The study underscores the vulnerability of younger male HCWs and emphasizes the importance of monitoring and protection measures in health-care settings. This research sheds light on the demographics and symptom severity among HCWs affected by COVID-19 during the specified period.

Keywords:

COVID-19, health-care workers, socioclinical profile

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Introduction

COVID-19, caused by the SARS-CoV-2 virus, emerged in December 2019 and swiftly escalated from a WHO-declared public health emergency to a pandemic on March 11, 2020.[1] Health-care workers (HCWs) are particularly susceptible to contracting the virus in health-care settings. Previous epidemics such as SARS, Ebola, and Middle east respiratory syndrome (MERS) have highlighted the risks faced by HCWs, and COVID-19 is no exception.[2] As of January 22, 2021, there were a staggering 96.2

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ORIGINAL ARTICLE

JIACM 2025; 26 (1-2): 7-12

Clinico-Pathological Profile of Anaemia in Adult Males at a Hospital in Uttar Pradesh

Shweta Sharma, Abha Gupta*, Remesh Rajappan**, Chhaya Mittal***, Anshu Singh*****

Abstract

Introduction: *Every fourth person in the world (27%) has anaemia, with developing countries alone accounting for more than 89% of the burden. Population-based studies on anaemia in India have mostly focused on women and children, with men anaemia receiving much less attention despite anaemia having adverse effect on their health, wellbeing, and economic productivity.*

Aims and objectives: *To study the various determinants and co-morbid conditions associated with anemia in males aged 18 - 49 years.*

Methods: *A cross-sectional study on anaemic male patients aged 18 - 49 years attending SVBP Hospital, Meerut, Uttar Pradesh.*

Results: *Majority of participants belonged to the 46 - 49 years age group. Nutritional issues were the most prevalent condition, affecting 43.08% of patients. Chronic liver disease (CLD) followed, with a prevalence of 20.0%. Our study revealed a notable association between co-morbid conditions and the severity of anaemia.*

Conclusion: *Anaemia in adult males is intricate and multifaceted, necessitating personalised interventions.*

Key words: *Anaemia in males, anaemia severity, co-morbidities in anaemia.*

Introduction

Anaemia is a condition in which the number of red blood cells or the haemoglobin concentration within them is lower than normal. The optimal haemoglobin concentration needed to meet physiologic needs varies by age, sex, altitude of residence, smoking habits and pregnancy status. WHO defines anaemia in children aged under 5 years and pregnant women as a haemoglobin concentration <11 g/dL at sea level, and anaemia in non-pregnant women as a haemoglobin concentration <12 g/dL and in males as <13g/dL. Anaemia is further classified depending upon the level of Hb into mild (Hb 11 - 12.9 g/dL), moderate (Hb 8 - 10.9 g/dL) and severe (Hb <8 g/dL)[1]. Every fourth person in the world (27%) has anaemia, with the developing countries alone accounting for more than 89% of the burden[2].

According to NFHS-5 survey, fifty-seven per cent of women and 25 per cent of men age 15 - 49 years have anaemia in India[3]. Anaemia is an important global health problem affecting men and women of reproductive age group. Various factors contribute to the prevalence of anaemia in males, encompassing socio-economic conditions, health status, behavioural factors and more (Fig. 1). These determinants collectively influence the likelihood of an individual developing anaemia and underscore the multifaceted nature of this health condition. Population-based studies on anaemia in India have mostly focused on women and children, with men with anaemia receiving much less attention despite anaemia having adverse effect on their health, wellbeing, and economic productivity[4].

Aim and Objectives

1. To study various aetiologies of anaemia in males aged 18 - 49 years attending a tertiary care hospital in Western Uttar Pradesh.
2. To study co-morbid conditions associated with anaemia in these adult males.

Material and Methods

This was a cross-sectional study of anaemic male patients attending SVBP Hospital, Meerut. During the study period of 3 months from 2023 May to 2023 July, in which all eligible patients who visited Medicine OPD were included in this study. So a sample size of of 65 patients was selected for study . Clinically, biochemically, and pathologically, all patients were evaluated. All male anaemic patients aged 18 - 49 years attending SVBP Hospital were interviewed using a pre-designed and pre-tested questionnaire. Relevant

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ORIGINAL ARTICLE

A Study of Association of Insulin Resistance with Pregnancy-induced Hypertension

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Received: 29 August 2023; Accepted: 13 March 2024

Abstract

Background: Preeclampsia is one of the important causes of maternal and fetal mortality and morbidity. One of the important risk factors for the development of diabetes is insulin resistance (IR).

Aims: To evaluate the association of IR with pregnancy-induced hypertension (PIH) and its severity.

Materials and methods: Data from 70 pregnant females who had completed 20 weeks of gestation and developed PIH were analyzed and compared with 30 appropriate controls. All females underwent measurement of fasting glucose level, fasting insulin level, and blood pressure.

Results: The mean age of the women in the control group was 26.17 years, and in the study group, it was 27.09 years. All females had completed 20 weeks of gestation. Around 86.6% of women in the control group, 54.1% with a variable degree of preeclampsia, and 48.6% of women with eclampsia were at 33–38 weeks of gestation. At the time of sampling, 13.3% of women in the control group, 45.81% of women with preeclampsia, and 51.3% of women with eclampsia were at 26–32 weeks of gestation. The mean IR among the control group was 1.37, in preeclampsia, it was 2.1, and in eclampsia, it was 3.58 with a *p*-value of 0.000, which is very highly significant. In this study, the severity of the disease was found to be directly proportional to IR.

Conclusion: Pregnancy complicated with preeclampsia and eclampsia showed more IR in comparison to pregnant women with normal blood pressure, and this relationship is independent of the age of pregnant women.

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Introduction

Adaptation to a sedentary lifestyle and high-calorie, saturated fat, and high-sodium-containing food intake has resulted in a higher incidence of hypertension, obesity, and insulin resistance (IR) nowadays. IR is related to a high-risk of cardiovascular disease and various metabolic abnormalities even without obesity and type 2 diabetes.[1]

A rapid, cost-effective, and easy method for diagnosing IR is homeostasis model assessment of insulin resistance (HOMA-IR).[2]

The etiology of pregnancy-induced hypertension (PIH) is multifactorial, and some hypotheses related to etiopathogenesis have been explored and are as follows[3]:

- Abnormal trophoblastic invasion and placental ischemia.
- Immune-mediated factors.
- Genomic imprinting.
- Nutritional factors.
- Inflammatory and vascular changes due to maternal maladaptation.

It is a dynamic process with central components like vasospasm, increased pressor response, uteroplacental insufficiency, and hematological changes adding to the pathogenesis of PIH. PIH leads to adverse fetal and maternal outcomes like low birth weight, increased risk of cardiovascular mortality, and eclampsia.[4]

Aims and Objectives of This Study

The primary aim of this study was to study the level of IR in patients with preeclampsia and eclampsia.

The primary goal is to set a correlation between preeclampsia/eclampsia and IR and to evaluate any clinical application of such correlation.

Materials and Methods

The study was conducted at LLRM Medical College, Meerut, Uttar Pradesh, India. Patients from the medicine/gynecological outpatient department (OPD) and inpatient department (IPD) were selected randomly into three groups as per the National High Blood Pressure Education Program (NHBPEP) Working Group guidelines.

Inclusion Criteria

Pregnant females aged over 18 years who had completed 20 weeks of gestation and were diagnosed with preeclampsia or eclampsia were included in the study.

Exclusion Criteria

All females with diabetes mellitus, chronic kidney disease (CKD), or autoimmune rheumatoid (AR) disease, undergoing treatment for diabetes mellitus, thyroid disease, females with acute infections, and pregnant females with preexisting hypertension were excluded from the study.

Measurement of Hypertension

In this study, pregnant women were diagnosed with PIH if two blood pressure readings of 140/90 mm Hg or greater were noted at least 4 hours apart. Blood pressure was measured in the right arm at the level of the heart with an appropriately sized cuff. Before the blood pressure measurement, the patient was made to sit and given a chance to rest for at least 10 minutes.

Detailed histories of any medication for hypertension were taken. The average systolic blood pressure (SBP) and diastolic blood pressure (DBP) were calculated as the average of three consecutive measurements. Hypertension was defined as per the American College of Obstetricians and Gynecologists (ACOG) guidelines, with SBP of 140 mm Hg and above or DBP of 90 mm Hg and above.

Measurement of Proteinuria

Almost 24-hour urine collection was conducted to diagnose proteinuria, with a value greater than 300 mg/24 hours considered significant.

Insulin Resistance

The HOMA-IR index (insulin μU/mL × glycemia mmol/L/22.5) was used to quantify IR. All participants in the study group were subjected to the measurement of body mass index (BMI), hemoglobin A1c (HbA1c), insulin levels, fasting blood sugar, complete hemogram, liver function test (LFT), kidney function test (KFT), fasting lipid profile (FLP), 24-hour urinary protein, and ultrasonography.

All the data was compiled and analyzed by applying appropriate statistical tests.

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ORIGINAL ARTICLE

JIACM 2024; 25 (4): 177-80

Prevalence of Hepatitis C Infection among Patients of Chronic Kidney Disease in a Tertiary Care Hospital of Western Uttar Pradesh

Abha Gupta, Shweta Sharma**, Anupam Nirala****

Abstract

Introduction: *Chronic kidney disease (CKD) and Hepatitis C, both are menacing public health problems. Hepatitis C virus (HCV) can easily be transmitted via haemodialysis. HCV leads to greater mortality and morbidity due to cirrhosis, while also increasing the progression of CKD. The aim of this study was to determine the prevalence of HCV infection among patients of CKD.*

Methods: *It was a cross-sectional study of CKD patients who were admitted in Medicine department in LLRM Medical College, Meerut, which is a tertiary care center in Western UP. Proper clinical history and laboratory investigations were noted and testing for HCV infection was conducted in all patients. Diagnosis of HCV was confirmed by HCV RNA (RT PCR) and positive Anti HCV IgG antibody.*

Results: *Total 146 patients of CKD were included in the study out of which 54.50% were males and 44.50% were females. Most of the patients were in age group 35 - 50 years (52.05%). Our study showed prevalence of HCV in CKD patients to be about 6.84% with male predominance.*

Conclusions: *Prevalence of HCV infection in CKD patients is high as compared to the general population. Screening for HCV with HCV RNA (RT PCR) is recommended. Strict precautions should be taken in hospitals and dialysis units to prevent it's transmission.*

Key words: *Chronic kidney disease, prevalence, Hepatitis C.*

Introduction

Currently India has around 10 - 15 million people infected with Hepatitis C virus (HCV) with a prevalence of 0.5 - 1.5%[1]. In renal replacement therapy units, HCV infection is a significant cause of morbidity and mortality among haemodialysis (HD) patients, and management of such patients becomes complicated in view of HCV infection. The prevalence of HCV among dialysis patients in India is reported to range between 10% and 40%[2-7].

For patients with severe renal impairment, acute renal failure, and stage IV chronic kidney disease, HD is a simulated way of maintaining homeostasis in the body. Many patients undergo dialysis for prolonged periods of time and are exposed to various side-effects as a consequence of dialysis. The spread of HCV to patients on HD is generally hospital acquired and potential risk factors include failure to disinfect devices, sharing of single-use vials for infusion, improper techniques, contaminated dialysis equipment, and supplies, contamination by attending personnel. However, long-standing vascular exposure and manifold blood transfusions also increases the risk.

The aim of these study was to estimate the prevalence of Hepatitis C infection among patients of CKD and to compare the prevalence of HCV infection in CKD patients on maintenance HD with those CKD patients not on maintenance HD.

Material and Methods

The study was conducted in SVBP Hospital, Meerut, (UP) during the period of one year. It was cross-sectional, single centre study.

All cases in the study were admitted in the hospital and evaluated for hepatitis C infection. The study included consenting adult patients of CKD and excluded CKD patients who had any haematological disorder or HIV infection.

A questionnaire was made to ensure proper data collection. The data collected included age, sex, occupation, duration of haemodialysis, number of blood units transfused, history of hypertension or diabetes mellitus.

1. Cut-off for CKD was defined as:

   GFR (eGFR) less than 60 mL/min/1.73 m² (GFR category G3a - G5) or,

   Persistent proteinuria by urinary dipstick for 3 months or more[8].

2. eGFR was calculated by CKD-EPI creatinine equation

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self interest

CHAPTER

33

An Approach to a Case of Bleeding Patient

Abha Gupta, Priyank Rastogi

CASE VIGNETTE

A 19-year-old college going male patient presented with large hematoma over left arm. One day back he had represented his college team in a cricket match and was hit by cricket ball on his left arm while fielding. Detailed history revealed that he had developed a similar hematoma seven years back over his forehead after sustaining an injury while playing in his school. There was no history of easy bruisability, epistaxis or intake of aspirin or nonsteroidal anti-inflammatory drugs (NSAIDs). He had no history of prior surgeries or use of any medications. His maternal uncle had passed away 20 years back from decompensated chronic liver disease due to transfusion related hepatitis B infection. On further enquiring, it was revealed that that his maternal uncle also used to experience similar bleeding episodes.

The patient was subjected to laboratory investigations and given initial treatment with paracetamol and ice packs. Clues from the clinical assessment and results of lab investigations helped in identification of the bleeding disorder.

PROVISIONAL DIAGNOSIS

- *Hemophilia A or B* (X-linked recessive bleeding disorder)
- Likely *factor VIII deficiency (hemophilia A)* or *factor IX deficiency (hemophilia B)*, considering the family history, recurrent hematomas, and the absence of other bleeding symptoms like easy bruising or epistaxis.

DIFFERENTIAL DIAGNOSIS

The differentials in such a case are summarized in **Box 1**. These consist of defects in any of the three mechanisms involved in process of hemostasis as described below:

1. *Constriction of blood vessels*: When endothelial injury occurs, a brief intense vasoconstriction occurs in the vessel which is a reflexive contraction that causes a decrease in blood flow to the area.
2. *Platelet aggregation and plugging*: In the second step, platelets encounter the area of vessel injury and begin to clump together and bind to the exposed collagen and endothelial lining. The process is assisted by von Willebrand factor (VWF), a glycoprotein in the blood plasma.
3. *Activation of coagulation cascade*: This is mediated by clotting factors (or coagulation factors) which prompt reactions that activate still more coagulation factors. The process is complex and is initiated along two basic pathways. The extrinsic pathway is triggered by trauma. This is mediated via coagulation factor VII. The intrinsic pathway begins in the bloodstream and is triggered by internal damage to vessel wall. This is mediated by coagulation factors VIII, IX, XI, XII, prekallikrein (PK) and high-molecular-weight kininogen (HMWK). Both of these merge into a third pathway, referred

BOX 1: Differential diagnosis of bleeding disorders.

Disorders of vessel wall:

- Hereditary hemorrhagic telangiectasia, scurvy, Ehlers–Danlos syndromes

Platelet disorders:

- *Quantitative (thrombocytopenia)*:
  - *Congenital thrombocytopenia*: Wiskott–Aldrich syndrome
  - *Impaired bone marrow production*: Infections and hematological malignancies
  - *Increased platelet destruction*: ITP (antibodies against platelet membrane glycoproteins IIb and IIIa cause removal of platelets by monocyte macrophage system), systemic lupus erythematosis (antibody to platelet glycoprotein Ib), drugs and nonimmune conditions such as infections, hypersplenism, DIC, TTP (widespread hyaline micro thrombi formed due to deficiency of ADAMTS13 in arterioles and capillaries)
- *Qualitative (decreased platelet function)*:
  - *Inherited*: Glanzmanns thrombasthenia, Bernard–Soulier syndrome and von Willebrand disease
  - *Acquired*: Drugs like antiplatelet therapy, uremia and in myeloproliferative disorders

Coagulation disorders:

- *Inherited*: Hemophilia A (factor VIII deficiency), hemophilia B (factor IX deficiency), hemophilia C, von Willebrand disease (due to increased factor VIII destruction) and congenital fibrinogen deficiency
- *Acquired*: Liver disease (liver failure leads to decreased levels of coagulation factors V, VII, IX, X, XI and prothrombin and vitamin K deficiency), vitamin K deficiency (leading to defective function of vitamin k dependent coagulation factors II, VII, IX, X), DIC and anticoagulant therapy

ORIGINAL ARTICLE

Clinicopsychological Profile of Geriatrics Patient Visiting the Outpatient Department of a Tertiary Care Center of Western Uttar Pradesh: A Cross-sectional Study

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Abstract

Background: The geriatric population is highly vulnerable to both clinical and psychological [illegible] the psychological health of geriatric patients remains underassessed, particularly [illegible] outpatient department (OPD) settings where multiple chronic illnesses, low [illegible] and hospitalization disrupt emotional well-being.

Aims and objectives: To evaluate the prevalence and association of chronic diseases with depression, anxiety, cognitive impairment, and sleep quality in elderly patients.

Materials and methods: A cross-sectional study was conducted on 100 patients aged ≥60 years attending the medicine OPD. Geriatric depression scale (GDS 15), generalized anxiety disorder scale (GAD-7), mini-mental state examination (MMSE), and Pittsburgh sleep quality index (PSQI) scales were used to assess psychological status. Clinical parameters and recent hospitalization history were also recorded.

Results: Hypertension (45%), diabetes (35%), and osteoarthritis (25%) were the most prevalent chronic illnesses. Mild depression (56%), mild anxiety (45%), cognitive impairment (45%), and poor sleep quality (78%) were common. Coronary artery disease (CAD) was significantly correlated with depression ($p = 0.008$), diabetes with cognitive decline ($p = 0.002$), and recent hospitalization with cognitive scores ($p = 0.006$).

Conclusion: The study underscores the need for integrated psychological assessment and [illegible] in geriatric medicine, even in resource-constrained OPD environments. Chronic [illegible] such as CAD and diabetes significantly affect psychological well-being in elderly patients. [illegible] of psychological screening is essential in OPDs.

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Introduction

The geriatric population represents a rapidly growing segment in India, presenting with increasing rates of multimorbidity. Often, psychological disorders such as depression, anxiety, cognitive impairment, and poor sleep remain unrecognized in outpatient settings. These undiagnosed issues significantly impair quality of life and treatment compliance. [illegible] study evaluates the psychological [illegible] elderly patients and explores [illegible] with chronic medical illnesses [illegible] out hospital setting.

Aims and Objectives

- To determine the prevalence of depression, anxiety, cognitive impairment, and poor sleep quality in geriatric patients.
- To assess the correlation between chronic diseases (e.g., coronary artery disease (CAD), diabetes) and psychological conditions.
- To evaluate the impact of recent hospitalization on psychological health in elderly outpatient department (OPD) attendees.

Materials and Methods

This cross-sectional study was conducted at the medicine OPD of SVBP Hospital, Lala Lajpat Rai Memorial Medical College, Meerut. A total of 100 geriatric patients aged 60 years or above were recruited.

Inclusion Criteria

Patients aged ≥60 years, attending the medicine OPD, willing to participate.

Exclusion Criteria

Patients with diagnosed psychiatric illness or terminal illness.

Assessment Tools

- Geriatric depression scale (GDS-15).[3]
- Generalized anxiety disorder scale (GAD-7).[4]
- Mini-mental state examination (MMSE).[5]
- Pittsburgh sleep quality index (PSQI).[6]

Demographic, clinical, and hospitalization history was recorded. Statistical tests included Pearson correlation and Chi-square.

Observations and Results

As shown in Table 1, hypertension, diabetes, and osteoarthritis were the most common chronic illnesses.

Table 2 shows that mild depressive symptoms were reported by 56% of participants, while moderate depression was seen in only 3%. This indicates a high prevalence of subclinical emotional distress in geriatric OPD patients, with no severe depression.

Table 1: Prevalence of chronic diseases among participants

Chronic illness	Patients (n)	Percentage (%)
Hypertension	45	45
Diabetes mellitus	35	35
Anemia	27	27
COPD/asthma	25	25
Osteoarthritis	25	25
CAD	20	20
CKD	15	15
Stroke	15	15
Tuberculosis	5	5
Chronic liver disease	5	5
Cancer	1	1

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ORIGINAL RESEARCH PAPER

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INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ASSOCIATION OF PARATHYROID HORMONE WITH HbA1c IN DIABETES MELLITUS PATIENTS

General Medicine

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ABSTRACT

Background: Diabetes mellitus (DM) is associated with hyperglycemia and disturbances in calcium metabolism. Parathyroid hormone (PTH) may influence glucose control by affecting insulin sensitivity and beta-cell function. **Objective:** To assess the association between serum PTH levels and glycemic control (HbA1c) in DM patients. **Method:** A cross-sectional study of 100 adult DM patients was conducted at LLRM Medical College, Meerut. Serum PTH, HbA1c, fasting glucose, and insulin levels were measured. Statistical analysis included Chi-square tests and Pearson correlation. **Result:** 88% of patients had elevated PTH. A significant association was found between high PTH and HbA1c >6.5% ($p = 0.001$). A moderate positive correlation was noted between PTH and HbA1c ($r = 0.42$, $p < 0.001$). PTH levels also increased with diabetes duration. **Conclusion:** High PTH levels are significantly associated with poor glycemic control in DM patients. PTH assessment may aid in comprehensive diabetes management.

KEYWORDS

Parathyroid Hormone, Diabetes Mellitus, HbA1c

BACKGROUND

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycemia, often accompanied by disturbances in calcium and phosphate metabolism. Parathyroid hormone (PTH), a key regulator of calcium homeostasis, controls bone resorption, renal calcium reabsorption, and vitamin D activation to maintain calcium balance.

Recent research suggests that PTH may influence glucose metabolism, contributing to insulin resistance and impaired beta-cell function. Elevated PTH levels — commonly observed in both primary and secondary hyperparathyroidism — are associated with a higher prevalence of glucose intolerance and DM. Potential mechanisms include PTH's interference with insulin receptor signaling, altered glucose uptake, and chronic low-grade inflammation. Additionally, vitamin D deficiency, frequently seen in DM, may further dysregulate PTH secretion and worsen insulin resistance.

HbA1c, a widely accepted marker of long-term glycemic control, reflects average blood glucose levels over the previous 2-3 months. The relationship between elevated PTH levels and poor glycemic control remains under-explored, though emerging studies suggest a possible link that may influence diabetes outcomes.

This study aims to investigate the association between PTH levels and HbA1c in patients with DM, exploring whether elevated PTH correlates with poorer glycemic control and identifying potential metabolic disturbances contributing to this relationship.

AIMS AND OBJECTIVE:

To investigate the association between serum PTH levels and HbA1c in patients with diabetes mellitus, and to explore whether elevated PTH correlates with poorer glycemic control.

MATERIAL AND METHOD

The study was conducted on patients of DM, who have attended the medicine OPD, endocrinology OPD Or admitted in medicine ward at LLRM medical college and associated SVBP Hospital, Meerut during the period from December 2022 to July 2024.

Study Type: Cross sectional study

Inclusion Criteria:

- Adults >18 years
- Confirmed diagnosed DM by ADA guidelines

Exclusion Criteria:

- Pregnant female
- Patients on Renal replacement therapy.
- Patients who had undergone Parathyroidectomy.
- Any drug causing PTH abnormality like lithium, loop diuretics etc.
- Patients with Thyroid Dysfunction.

RESULTS

Patient Characteristics

- Total Patients: 100
- Mean Age: 47.18 ± 13.20 years
- Sex Distribution: 57% male, 43% female

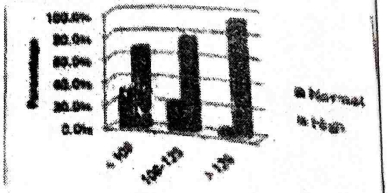
Table1 Fasting Blood Sugar and PTH

Fasting blood glucose	PTH				Total	Chi-square	Pvlue
	Normal		High				
	No.	%	No.	%			
<100	6	31.6%	13	68.4%	19	10.619	005
100-125	2	22.2%	7	77.8%	9		
>125	4	5.6%	68	94.4%	72		
Total	12	12%	88	88%	100		

68.4% of individuals with fasting glucose <100 mg/dL have high PTH levels, increasing to 77.8% for those with levels between 100-125 mg/dL, and further to 94.4% for those with levels >126 mg/dL.

Statistical Significance:

The Chi-square test result (value = 10.619, p-value = 0.005) indicates a statistically significant association between fasting blood glucose levels and PTH levels.



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ORIGINAL ARTICLE

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Correlation of Neutrophil- to-Lymphocyte Ratio with Functional Ability in COPD Patients

Abha Gupta, Shweta Sharma*, Ansuk Shukla**, Santosh Mittal***, SKK Malik****, Seema Jain******

Abstract

Introduction: *Chronic Obstructive Pulmonary Disease (COPD) remains a leading cause of illness and death worldwide, especially in low- and middle-income countries like India. It is marked by chronic respiratory symptoms and progressive airflow obstruction. In recent years, systemic inflammation has gained recognition as a central factor in COPD progression. Among inflammatory markers, the neutrophil-to-lymphocyte ratio (NLR) has emerged as a potential indicator of disease severity and prognosis. This study aimed to evaluate the relationship between NLR and clinical, radiological, and functional parameters in patients with stable COPD.*

Methods: *A cross-sectional study was conducted at LLRM Medical College and SVBP Hospital, Meerut, during 2023 – 2024. Sixty-one stable COPD patients aged 35 years or older were enrolled based on post-bronchodilator $FEV_1/FVC < 70\%$ and absence of exacerbation in the prior two months. All patients underwent clinical assessment, spirometry, six-minute walk test (6MWT), chest imaging, and laboratory tests including complete blood count and CRP. NLR was calculated and correlated with clinical indices, GOLD stage, and BODE index.*

Results: *The mean age was 64.2 years, and 72% were male. The average NLR was 4.36. Most patients were in GOLD 3 category. NLR showed a negative correlation with FEV_1, FEV_1/FVC, 6MWT distance, and SpO_2, and a positive correlation with CRP and BODE index. NLR levels increased consistently with GOLD stage ($p < 0.001$).*

Conclusion: *NLR appears to be a simple, cost-effective marker that correlates well with COPD severity and functional decline. It may aid in risk stratification and clinical decision-making.*

Key words: *Chronic obstructive pulmonary disease, neutrophil-to-lymphocyte ratio.*

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable, and treatable condition marked by persistent respiratory symptoms and airflow limitation due to airway and alveolar abnormalities, often caused by exposure to harmful particles or gases. It is a major global health issue and one of the leading causes of death worldwide. According to the WHO[1], approximately 65 million people suffer from moderate to severe COPD, with most deaths occurring in low- and middle-income countries, particularly in India and China, which together account for 66% of global COPD mortality[2].

India bears a significant COPD burden, with 55.3 million cases reported in 2016[3]. COPD prevalence increases with age and varies by region – ranging from 4.36% in Bangalore to 10% in Delhi. Key risk factors include smoking, biomass fuel use, air pollution, occupational hazards, aging, socio-economic status, and past tuberculosis. COPD also imposes a heavy economic and health-related quality of life burden and is the leading cause of disability among chronic respiratory diseases.

Systemic inflammation plays a central role in COPD pathogenesis and progression. Elevated levels of inflammatory markers such as c-reactive protein (CRP), interleukins, TNF-α, and leukocytes (neutrophilia and leukopenia) are frequently observed. Higher Neutrophil-to-Lymphocyte-Ratio (NLR) levels correlate with disease severity, reduced exercise tolerance, increased dyspnoea, and greater risk of hospitalisation and mortality.

Material and Methods

This cross-sectional study was conducted between 2023 and 2024 in the Department of Medicine at LLRM Medical College and SVBP Hospital, Meerut, Uttar Pradesh. It included patients aged 35 years and above diagnosed with Chronic Obstructive Pulmonary Disease (COPD) who were attending the Medicine and Chest outpatient departments.

All participants were evaluated through a detailed clinical history, including the duration of disease and personal habits such as smoking and alcohol use. A structured proforma was used to document history, physical findings, and investigation results. Each subject underwent a complete

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