"PREVALENCE OF ASYMPTOMATIC URINARY ABNORMALITIES AMONG KLE UNIVERSITY STUDENTS - A ONE YEAR CROSS SECTIONAL STUDY AT KLE UNIVERSITY, BELGAUM"

By

Dr. HEMANTH KUMAR.S.R
REG NO. BG0109003

Dissertation

Submitted to the
KLE University, Belgaum, Karnataka

In Partial Fulfillment
of the requirements for the degree of

M. D.
in
GENERAL MEDICINE

Under the Guidance of

Dr. MALLIKARJUN S. KHANPET MD,DNB
Professor

DEPARTMENT OF GENERAL MEDICINE,
JAWAHARLAL NEHRU MEDICAL COLLEGE,
BELGAUM, KARNATAKA

MAY - 2012

KLE UNIVERSITY, BELGAUM,

KARNATAKA

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled "**PREVALENCE OF ASYMPTOMATIC URINARY ABNORMALITIES AMONG KLE UNIVERSITY STUDENTS - A ONE YEAR CROSS SECTIONAL STUDY AT KLE UNIVERSITY, BELGAUM"** is a bonafide and genuine research work carried out by me under the guidance of **Dr. MALLIKARJUN S. KHANPET** **MD, DNB** Professor, Department of General Medicine, Jawaharlal Nehru Medical College, Nehru Nagar, Belgaum – 590010.

Date:

Place: Belgaum

(Dr. HEMANTH KUMAR.S.R)
REG NO. BG0109003

KLE UNIVERSITY, BELGAUM,

KARNATAKA

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled "**PREVALENCE OF ASYMPTOMATIC URINARY ABNORMALITIES AMONG KLE UNIVERSITY STUDENTS - A ONE YEAR CROSS SECTIONAL STUDY AT KLE UNIVERSITY, BELGAUM"** is a bonafide research work done by **Dr. HEMANTH KUMAR.S.R (REG NO. BG0109003)** in partial fulfillment of the requirement for the degree of **M. D. (GENERAL MEDICINE).**

Date:

Place: Belgaum

Dr. MALLIKARJUN S. KHANPET **MD,DNB**
Professor,
Department of General Medicine,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

KLE UNIVERSITY, BELGAUM,

KARNATAKA

ENDORSEMENT BY HOD, PRINCIPAL

This is to certify that the dissertation entitled "**PREVALENCE OF ASYMPTOMATIC URINARY ABNORMALITIES AMONG KLE UNIVERSITY STUDENTS - A ONE YEAR CROSS SECTIONAL STUDY AT KLE UNIVERSITY, BELGAUM"** is a bonafide research work done by **Dr. HEMANTH KUMAR.S.R (REG NO. BG0109003)** under the guidance of **Dr. MALLIKARJUN S. KHANPET MD,DNB** Professor, Department of General Medicine, Jawaharlal Nehru Medical College, Nehru Nagar, Belgaum – 590 010.

Dr. V. A. KOTHIWALE MD, Ph.D
Professor and Head,
Department of General Medicine,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

Date:
Place: Belgaum

Dr. V. D. PATIL MD,DCH
Principal,
J. N. Medical College,
Nehru Nagar, Belgaum – 10

Date:
Place: Belgaum

KLE UNIVERSITY, BELGAUM,

KARNATAKA

COPYRIGHT

DECLARATION BY THE CANDIDATE

I hereby declare that the KLE University, Belgaum, Karnataka shall have the rights to preserve, use and disseminate this dissertation in print or electronic format for academic / research purpose.

Date :

Place : Belgaum

(Dr. HEMANTH KUMAR.S.R)
REG NO. BG0109003

ACKNOWLEDGEMENT

I am extremely grateful to my respected teacher and guide **Dr. Mallikarjun S. Khanpet** MD, DNB Professor, Department of Medicine, J. N. Medical College, Belgaum, for his able guidance, supervision, invaluable suggestions, and kind help, rendered throughout the course of my study, and in the preparation of this dissertation.

I am extremely grateful to **Dr. V. A. Kothiwale** MD, Ph.D Professor and Head, Department of Medicine, J. N. Medical College, Belgaum, for his timely guidance, encouragement, and help in preparing this dissertation.

I am grateful to **Dr. V. D. Patil** MD DCH, Principal, Jawaharalal Nehru Medical College, Belgaum for extending his help towards the completion of this dissertation.

I take this opportunity to sincerely thank my respected teacher **Dr. Vijayakumar G. Somannavar** MD Professor, Department of Medicine, for his continuous support and guidance.

My respectful regard and humble thanks to **Dr. Rekha. S. Patil** MD, **Dr. B. Srinivas** MD, **Dr. Arathi Darshan** MD, Professors, Department of Medicine, J. N. Medical College, Belgaum, for their constant inspiration and help.

My sincere thanks to **Dr. Prakash Babaliche** MD, **Dr. Raju Badiger** MD, **Dr. Naveen Angadi** MD **Dr. Dnyanesh Morkar** MD, **Dr. Rajeev. A. Malipatil** MD, **Dr. Anwar. H. Mujawar** MD, **Dr. Jayaprakash Appajigol** MD, **Dr. Madhav Prabhu** MD, and **Dr. Pournima Patil** MD, Department of Medicine, J. N. Medical College, Belgaum, for their constant help.

I wish to offer my thanks to **Department of Medical Education** for their valuable information and support.

No amount of words can measure up to the deep sense of gratitude and thankfulness that I feel towards **My Father Mr. Rudramurthy. S.R, My Mother Mrs. VimalaKumari. S, My Uncle Mr. Prakash Kumar. H. S, My Aunty Mrs. Sheela, My Grand Mothers Mrs. Renukamma and Mrs. Narasamma and My Brother Uday Shankar. S. R,** whose cherished blessings and countless sacrifices are behind whatever success I have achieved in my life.

I dedicate this dissertation in the memory of my late grand parents **Shri. Revanasiddappa. S. M, Shri. H. J. Shivanna and Smt. Sarvamangalamma.**

I offer my sincere thanks to all my **Friends** and **Post Graduate Colleagues Dr. Ranjan, Dr. Toby, Dr. Chandramouli, Dr. Harshavardhan, Dr. Sasanka, Dr. Sneha, Dr. Veena, Dr. Vinit and Dr. Anshul** for their companionship and support.

Last but not the least, this acknowledgement is incomplete if I fail in my duty to thank all the **Medical and Dental students** who have whole heartedly participated in the study and have made the study complete.

I bow my head in respect before **God Almighty**.

Date:

Place: **Dr. HEMANTH KUMAR.S.R**
BG0109003

LIST OF ABBREVIATIONS USED

ANCA	–	Antineutrophilic Cytoplasmic antibody
ASLO	–	Antistreptolysin O
BUN	–	Blood urea nitrogen
CFU	–	Colony forming units
CKD	–	Chronic Kidney Disease
CMV	–	Cytomegalovirus
COX-2	–	Cyclo-oxygenase -2
CT	–	Computed tomography
dL	–	Deci Litre
EBV	–	Epstein – Barr Virus
ESRD	–	End stage renal disease
FSGS	–	Focal Segmental Glomerulosclerosis
GBM	–	Glomerular Basement Membrane
GFR	–	Glomerular Filtration Rate
HPF	–	High Power Field
IVP	–	Intravenous pyelography
MPGN	–	Membranoproliferative Glomerulonephritis
NPV	–	Negative Predictive Value
NSAIDs	–	Non – Steroidal anti inflammatory agents
PPV	–	Positive Predictive Value
RBCs	–	Red Blood Cells
RPGN	–	Rapidly Progressive Glomerulonephritis
RTA	–	Renal Tubular Acidosis
TIN	–	Tubulointerstitial nephritis

TINU	–	Tubulointerstitial nephritis with uveitis
UA	–	Urinalysis
UTI	–	Urinary tract infections
VDRL	–	Venereal Disease Research Laboratory
WBCs	–	White Blood Cells
μL	–	Micro Litre

ABSTRACT

Background and objectives

An abnormal urinary test may be the earliest warning of a significant renal pathology. With the aid of routine dipstick examinations early symptoms of diseases of the kidneys and the urinary tract (Pyuria, hematuria and proteinuria) can be identified. The present study was undertaken to assess the prevalence of asymptomatic urinary abnormalities which will help to prevent progression into CKD or to postpone the need for renal replacement and other abnormalities of the urinary system.

Methodology

The present one year cross sectional study was conducted in the Department of Medicine, Jawaharlal Nehru Medical College, Belgaum during the period of January 2010 to December 2010. A total of 849 undergraduate Medical and Dental students studying at Jawaharlal Nehru Medical College, Belgaum and KLES V. K Institute of Dental Sciences, Belgaum were included. Urine samples were collected in sterile wide mouthed containers and tested using dip sticks. The colour change on the dip stick due to chemical reaction was compared to standard chart and results were interpreted and the abnormalities were analysed

Results

Of the 849 students, 320 were males (37.69%) and 529 were females (62.31%). Maximum number of students (22.97%) had age as 20 years. A total of 79 students (9.31%) had asymptomatic urinary abnormalities. 51 students had proteinuria (6.01%), 18 had hematuria (2.12%) and Nitrituria was seen in 10

(1.18%) female students. Proteinuria (6.42% v/s 5.31%) and hematuria (2.27% vs 1.88%) was more common in females. Those who had urinary abnormalities had only one urinary abnormality and no one had more than one urinary abnormality.

Interpretation and conclusion

Overall, in the present study, there was a significantly higher prevalence of asymptomatic urinary abnormalities among apparently healthy young adults. These students who had urinary abnormalities need further evaluation in detail.

Keywords

Asymptomatic urinary abnormalities; Hematuria; Nitrituria; Proteinuria;

CONTENTS

LIST OF TABLES

LIST OF GRAPHS

LIST OF FIGURES

LIST OF PHOTOGRAPHS

Chapter 1

Introduction

INTRODUCTION

Abnormalities detected in routine urinalysis in patients who have no symptoms of renal or urologic disease such as glycosuria, pyuria, hematuria, and proteinuria are a common finding in clinical practice. Renal diseases are often accidentally discovered during routine urine analysis in asymptomatic healthy individuals.[1]

With the aid of routine dipstick examinations early symptoms of diseases of the kidneys and the urinary tract (Pyuria, hematuria and proteinuria) can be identified.[2]

An abnormal urinary test may be the earliest warning of a significant renal pathology.[3,4]

Complete urinalysis includes physical, chemical, and microscopic examinations. Midstream clean collection is acceptable in most situations and the specimen should be examined within two hours of collection.

Physical properties like color, odour and specific gravity can help in suspecting certain diseases. Cloudy urine often is a result of precipitated phosphate crystals in alkaline urine, but pyuria also can be the cause. A strong odor may be the result of a concentrated specimen rather than a urinary tract infection. Specific gravity provides a reliable assessment of the patient's hydration status.

Dipstick urinalysis is convenient, but false-positive and false-negative results can occur.[5]

Microhematuria has a range of causes, from benign to life threatening. Glomerular, renal, and urologic causes of microhematuria often can be differentiated by other elements of the urinalysis. Although transient proteinuria typically is a benign condition, persistent proteinuria requires further work-up. Uncomplicated urinary tract infections diagnosed by positive leukocyte esterase and nitrite tests can be treated without culture.[5]

Many renal diseases are found to begin at a very young age; early detection of a urinary abnormality is useful in selecting patients who require long term surveillance. Almost 80% of patients who come with CKD cannot afford renal replacement therapy. At present, there are not much studies in India to show the prevalence of asymptomatic urinary abnormalities in healthy young adults.

Hence, the present study was undertaken to assess the prevalence of asymptomatic urinary abnormalities which will help to prevent progression into CKD or to postpone the need for renal replacement and other abnormalities of the urinary system.

Chapter 2

Objectives

OBJECTIVES

To study the prevalence of asymptomatic urinary abnormalities among young healthy students of KLE University.

Chapter 3

Review of Literature

REVIEW OF LITERATURE

Urinalysis is invaluable in the diagnosis of nephrological conditions such as primary glomerular diseases, secondary glomerulonephritis, chronic tubulointerstitial diseases, urinary tract infection (UTI), and malignancy. It also can alert the physician to the presence of systemic disease affecting the kidneys. Although urinalysis is not recommended as a routine screening tool except in women who may be pregnant, physicians should know how to interpret urinalysis results correctly.

Specimen Collection

A midstream clean-catch technique usually is adequate in men and women. Although prior cleansing of the external genitalia often is recommended in women, it has no proven benefit. In fact, a recent study[7] found that contamination rates were similar in specimens obtained with and without prior cleansing (32 versus 29 percent). Urine must be refrigerated if it cannot be examined promptly; delay of more than two hours between collection and examination often cause unreliable results.[8]

Physical Properties: Color and Odor

Foods, medications, metabolic products, and infection can cause abnormal urine colors.[9] Cloudy urine often is a result of precipitated phosphate crystals in alkaline urine, but pyuria also can be the cause.

Common Causes of Abnormal Urine Coloration

Color	Pathologic causes	Food and drug causes
Cloudy	Phosphaturia, pyuria, chyluria, lipiduria, hyperoxaluria	Diet high in purine-rich foods (hyperuricosuria)
Brown	Bile pigments, myoglobin	Fava beans Levodopa, metronidazole, nitrofurantoin, some antimalarial agents
Brownish-black	Bile pigments, melanin, methemoglobin	Cascara, levodopa, methyldopa, senna
Green or blue	Pseudomonal UTI, biliverdin	Amitriptyline, indigo carmine, IV cimetidine, IV promethazine, methylene blue, triamterene
Orange	Bile pigments	Phenothiazines, phenazopyridine, Phenolphthalein, rifampin
Red	Hematuria, hemoglobinuria, myoglobinuria, porphyria	Beets, blackberries, rhubarb
Yellow	Concentrated urine	Carrots, Cascara

The normal odor of urine is described as urinoid; this odor can be strong in concentrated specimens but does not imply infection. Diabetic ketoacidosis can cause urine to have a fruity or sweet odor, and alkaline fermentation can cause an ammoniacal odor after prolonged bladder retention. Persons with UTIs often have urine with a pungent odor. Other causes of abnormal odors include gastrointestinal-bladder fistulas (associated with a fecal smell), cystine decomposition (associated with a sulfuric smell), and medications and diet (asparagus).

Dipstick Urinalysis

False-positive and false-negative results are not unusual in dipstick urinalysis.

Causes of False-Positive and False-Negative Urinalysis Results

Dipstick test	False positive	False negative
Bilirubin	Phenazopyridine	Chlorpromazine, selenium
Blood	Dehydration, exercise, hemoglobinuria, menstrual blood, myoglobinuria	Captopril, elevated specific gravity, pH < 5.1, proteinuria, vitamin C
Glucose	Ketones, levodopa	Elevated specific gravity, uric acid, vitamin C
Ketones	Acidic urine, elevated specific gravity, mesna, phenolphthalein, some drug metabolites (e.g., levodopa)	Delay in examination of urine
Leukocyte esterase	Contamination	Elevated specific gravity, glycosuria, ketonuria, proteinuria, some oxidizing drugs (cephalexin, nitrofurantoin, tetracycline, gentamicin), vitamin C
Nitrites	Contamination, exposure of dipstick to air, phenazopyridine	Elevated specific gravity, elevated urobilinogen levels, nitrate reductase-negative bacteria, pH < 6.0, vitamin C
Protein	Alkaline or concentrated urine, phenazopyridine, quaternary ammonia compounds	Acidic or dilute urine, primary protein is not albumin
Specific gravity	Dextran solutions, IV radiopaque dyes, proteinuria	Alkaline urine
Urobilinogen	Elevated nitrite levels, phenazopyridine	—

Accuracy of Urinalysis for Disease Detection

Condition	Test	Results	Sensitivity (%)	Specificity (%)	PPV	NPV
Microscopic hematuria[10]	Dipstick	≥ 1+ blood	91 to 100	65 to 99	NA	NA
Significant proteinuria[11]	Dipstick	≥ 3+ protein	96	87	NA	NA
Culture-confirmed UTI[12–19]	Dipstick	Abnormal leukocyte esterase	72 to 97	41 to 86	43 to 56	82 to 91
		Abnormal nitrites	19 to 48	92 to 100	50 to 83	70 to 88
		Abnormal leukocyte esterase or nitrites	46 to 100	42 to 98	52 to 68	78 to 98
		≥ 3+ protein	63 to 83	50 to 53	53	82
		≥ 1+ blood	68 to 92	42 to 46	51	88
		Any of the above abnormalities	94 to 100	14 to 26	44	100
	Microscopy	> 5 WBCs per HPF	90 to 96	47 to 50	56 to 59	83 to 95
		> 5 RBCs per HPF	18 to 44	88 to 89	27	82
		Bacteria (any amount)	46 to 58	89 to 94	54 to 88	77 to 86

SPECIFIC GRAVITY

Urinary specific gravity correlates with urine osmolality and gives important insight into the patient's hydration status. It also reflects the concentrating ability of the kidneys. Normal Urine Specific Gravity can range from 1.003 to 1.030; a value of less than 1.010 indicates relative hydration, and a value greater than 1.020 indicates relative dehydration.[20] Increased Urine Specific Gravity is associated with glycosuria and the syndrome of inappropriate antidiuretic hormone; decreased Urine Specific Gravity is associated with diuretic use, diabetes insipidus, adrenal insufficiency, aldosteronism, and impaired renal function.[20] In patients with intrinsic renal insufficiency, Urine Specific Gravity is fixed at 1.010—the specific gravity of the glomerular filtrate.

URINARY PH

Urinary pH can range from 4.5 to 8 but normally is slightly acidic (i.e., 5.5 to 6.5) because of metabolic activity. Ingestion of proteins and acidic fruits (cranberries) can cause acidic urine, and diets high in citrate can cause alkaline urine.[21–23] Urinary pH generally reflects the serum pH, except in patients with renal tubular acidosis (RTA). The inability to acidify urine to a pH of less than 5.5 despite an overnight fast and administration of an acid load is the hallmark of RTA. In type I (distal) RTA, the serum is acidic but the urine is alkaline, secondary to an inability to secrete protons into the urine. Type II (proximal) RTA is characterized by an inability to reabsorb bicarbonate. This situation initially results in alkaline urine, but as the filtered load of bicarbonate decreases, the urine becomes more acidic.

Determination of urinary pH is useful in the diagnosis and management of UTIs and calculi. Alkaline urine in a patient with a UTI suggests the presence of a urea-splitting organism, which may be associated with magnesium-ammonium phosphate crystals and can form staghorn calculi. Uric acid calculi are associated with acidic urine.

HEMATURIA

According to the American Urological Association, the presence of three or more red blood cells (RBCs) per high-powered field (HPF) in two of three urine samples is the generally accepted definition of hematuria.[24–26] The dipstick test for blood detects the peroxidase activity of erythrocytes. However, myoglobin and hemoglobin also will catalyze this reaction, so a positive test result may indicate hematuria, myoglobinuria, or hemoglobinuria. Visualization of intact erythrocytes on microscopic examination of the urinary sediment can distinguish hematuria from other conditions. Microscopic examination also may detect RBC casts or dysmorphic RBCs. Hematuria is divided into glomerular, renal (i.e., nonglomerular), and urologic etiologies.[1]

Common Causes of Hematuria[1]

I. Glomerular

1. Primary glomerulonephritis
    a. IgA nephropathy (Berger's disease)
    b. Postinfectious glomerulonephritis
    c. Membranoproliferative glomerulonephritis
    d. Focal glomerulosclerosis

e. Rapidly progressive glomerulonephritis

f. Goodpasture's disease

g. Henoch-Schönlein purpura

2. Secondary glomerulonephritis

a. Systemic lupus nephritis

b. Vasculitis

c. Essential mixed cryoglobulinemia

d. Hemolytic-uremic syndrome

e. Thrombotic thrombocytopenic purpura

3. Familial

a. Thin basement membrane disease

b. Hereditary nephritis (Alport's syndrome)

c. Fabry's disease

d. Nail-patella syndrome

II. **NONGLOMERULAR**

1. Renal parenchymal

a. Renal tumors (Wilm's tumor)

b. Tubulointerstitial diseases

c. Vascular

i. Renal artery embolism

ii. Renal vein thrombosis

iii. Malignant hypertension

iv. Sickle cell disease or trait

v. Loin pain – hematuria syndrome

vi. Arteriovenous malformation

d. Metabolic

i. Hypercalciuria

ii. Hyperuricosuria

e. Familial

i. Polycystic kidney disease

ii. Medullary sponge kidneys

f. Infection

i. Pyelonephritis

ii. Tuberculosis

2. Extra renal

a. Tumors (pelvis, ureter, bladdse, prostate)

b. Benign prostatic hyperplasia

c. Stone

d. Infectious

i. Cystitis

ii. Prostatitis

iii. Schistosoma haematobium

iv. Tuberculosis

3. Others

a. Drugs

i. Heparin

ii. Warfarin

iii. NSAIDs

iv. Cyclophosphamide (Hemorrhagic cystitis)

b. Systemic bleeding disorders

c. Trauma

i. Boxing

ii. Football

iii. Vigorous exercise

Glomerular Hematuria

Glomerular hematuria typically is associated with significant proteinuria, erythrocyte casts, and dysmorphic RBCs. However, 20 percent of patients with biopsy-proven glomerulonephritis present with hematuria alone.[27] IgA nephropathy (Berger's disease) is the most common cause of glomerular hematuria.

Renal (Nonglomerular) Hematuria

Nonglomerular hematuria is secondary to tubulointerstitial, renovascular, or metabolic disorders. Like glomerular hematuria, it often is associated with significant proteinuria; however, there are no associated dysmorphic RBCs or erythrocyte casts. Further evaluation of patients with glomerular and nonglomerular hematuria should include determination of renal function and 24 – hour urinary protein or spot urinary protein-creatinine ratio.

Urologic Hematuria

Urologic causes of hematuria include tumors, calculi, and infections. Urologic hematuria is distinguished from other etiologies by the absence of proteinuria, dysmorphic RBCs, and erythrocyte casts. Even significant hematuria will not elevate the protein concentration to the 2+ to 3+ range on the dipstick test.[28] Up to 20 percent of patients with gross hematuria have urinary tract malignancy; a full work-up with cystoscopy and upper-tract imaging is indicated in patients with this condition.[29] In patients with asymptomatic microscopic hematuria (without proteinuria or pyuria), 5 to 22 percent have serious urologic disease, and 0.5 to 5 percent have a genitourinary malignancy.[30–34]

Exercise-induced hematuria is a relatively common, benign condition that often is associated with long-distance running. Results of repeat urinalysis after 48 to 72 hours should be negative in patients with this condition.[35]

Evaluation of hematuria[2]

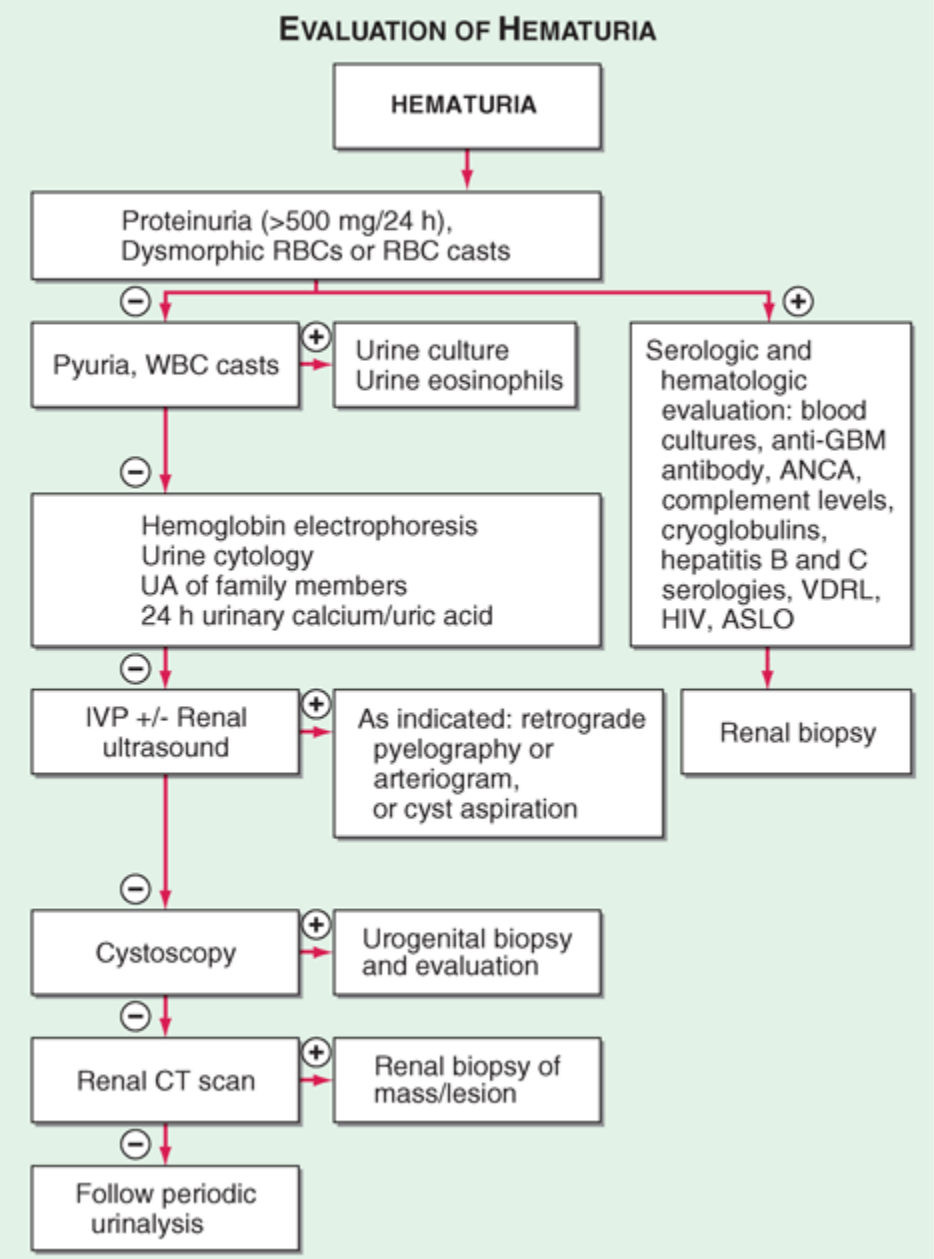


Figure 1. Approach to a patient with hematuria

Proteinuria

In healthy persons, the glomerular capillary wall is permeable only to substances with a molecular weight of less than 20,000 Daltons. Once filtered,

low–molecular-weight proteins are reabsorbed and metabolized by the proximal tubule cells. Normal urinary proteins include albumin, serum globulins, and proteins secreted by the nephron. Proteinuria is defined as urinary protein excretion of more than 150 mg per day (10 to 20 mg per dL) and is the hallmark of renal disease. Microalbuminuria is defined as the excretion of 30 to 150 mg of protein per day and is a sign of early renal disease, particularly in diabetic patients.

The reagent on most dipstick tests is sensitive to albumin but may not detect low concentrations of γ-globulins and Bence Jones proteins. Dipstick tests for trace amounts of protein yield positive results at concentrations of 5 to 10 mg per dL—lower than the threshold for clinically significant proteinuria.[21] A result of 1+ corresponds to approximately 30 mg of protein per dL and is considered positive; 2+ corresponds to 100 mg per dL, 3+ to 300 mg per dL, and 4+ to 1,000 mg per dL.[36,37] Dipstick urinalysis reliably can predict albuminuria with sensitivities and specificities of greater than 99 percent.[10] Asymptomatic proteinuria is associated with significant renal disease in less than 1.5 percent of patients.[10,38]

Proteinuria can be classified as transient or persistent.[1] In transient proteinuria, a temporary change in glomerular hemodynamics causes the protein excess; these conditions follow a benign, self-limited course.[39,40] Orthostatic (postural) proteinuria is a benign condition that can result from prolonged standing; it is confirmed by obtaining a negative urinalysis result after eight hours of recumbency.

Common Causes of Proteinuria

I. Transient proteinuria

1. Congestive heart failure
2. Dehydration
3. Emotional stress
4. Exercise
5. Fever
6. Orthostatic (postural) proteinuria
7. Seizures

II. Persistent proteinuria

1. Primary glomerular
    a. Focal segmental glomerulonephritis
    b. IgA nephropathy (i.e., Berger's disease)
    c. IgM nephropathy
    d. Membranoproliferative glomerulonephritis
    e. Membranous nephropathy
    f. Minimal change disease
2. Secondary glomerular
    a. Alport's syndrome
    b. Amyloidosis

c. Collagen vascular diseases (e.g., systemic lupus erythematosus)
d. Diabetes mellitus
e. Drugs (NSAIDs, penicillamine [Cuprimine], gold, ACE inhibitors)
f. Fabry's disease
g. Infections (HIV, syphilis, hepatitis, post-streptococcal infection)
h. Malignancies (lymphoma, solid tumors)
i. Sarcoidosis
j. Sickle cell disease

3. Tubular causes

    a. Aminoaciduria
    b. Drugs (NSAIDs, antibiotics)
    c. Fanconi syndrome
    d. Heavy metal ingestion
    e. Hypertensive nephrosclerosis
    f. Interstitial nephritis

4. Overflow causes

    a. Hemoglobinuria
    b. Multiple myeloma
    c. Myoglobinuria

Persistent proteinuria is divided into three general categories: glomerular, tubular, and overflow. In glomerular proteinuria, the most common type, albumin is the primary urinary protein. Tubular proteinuria results when malfunctioning tubule cells no longer metabolize or reabsorb normally filtered protein. In this condition, low–molecular-weight proteins predominate over albumin and rarely exceed 2 g per day. In overflow proteinuria, low–molecular-weight proteins overwhelm the ability of the tubules to reabsorb filtered proteins.

Further evaluation of persistent proteinuria usually includes determination of 24-hour urinary protein excretion or spot urinary protein-creatinine ratio, microscopic examination of the urinary sediment, urinary protein electrophoresis, and assessment of renal function.[37]

Evaluation of proteinuria[2]

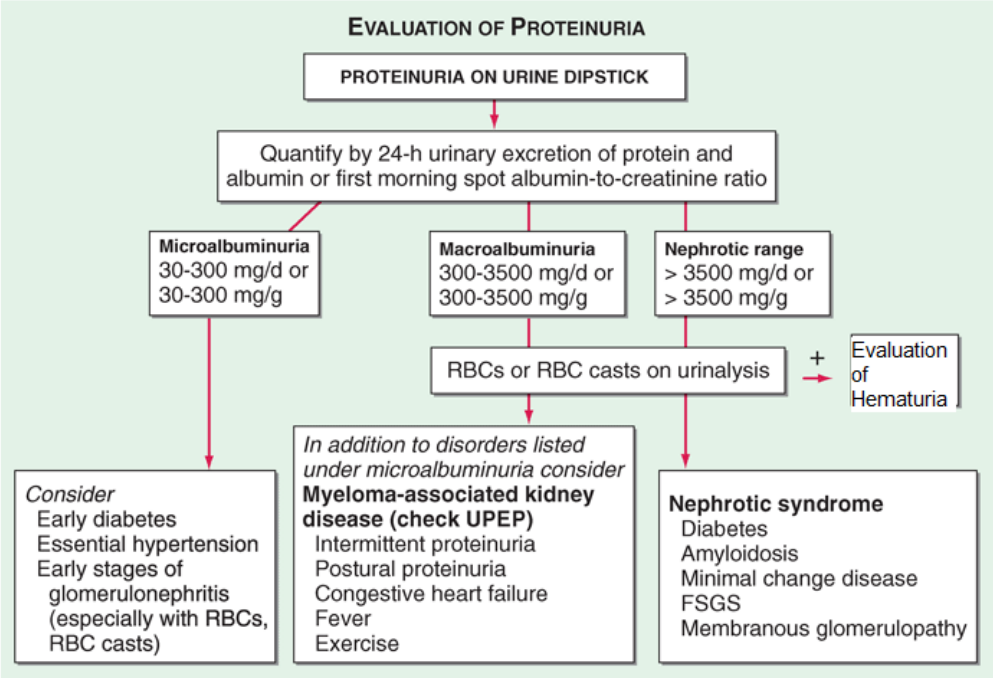


Figure 2. Approach to a patient with proteinuria

Glycosuria

Glucose normally is filtered by the glomerulus, but it is almost completely reabsorbed in the proximal tubule. Glycosuria occurs when the filtered load of glucose exceeds the ability of the tubule to reabsorb it (i.e., 180 to 200 mg per dL). Etiologies include diabetes mellitus, Cushing's syndrome, liver and pancreatic disease, and Fanconi's syndrome.

Ketonuria

Ketones, products of body fat metabolism, normally are not found in urine. Dipstick reagents detect acetic acid through a reaction with sodium nitroprusside or nitro-ferricyanide and glycine. Ketonuria most commonly is associated with uncontrolled diabetes, but it also can occur during pregnancy, carbohydrate-free diets, and starvation.

Nitrites

Nitrites normally are not found in urine but result when bacteria reduce urinary nitrates to nitrites. Many gram-negative and some gram-positive organisms are capable of this conversion, and a positive dipstick nitrite test indicates that these organisms are present in significant numbers (i.e., more than 10,000 per mL). This test is specific but not highly sensitive. Thus, a positive result is helpful, but a negative result does not rule out UTI.[12] The nitrite dipstick reagent is sensitive to air exposure, so containers should be closed immediately after removing a strip. After one week of exposure, one third of strips give false-positive results, and after two weeks, three fourths give false-positive results.[41]

Non-nitrate–reducing organisms also may cause false-negative results, and patients who consume a low-nitrate diet may have false-negative results.

Leukocyte esterase

Leukocyte esterase is produced by neutrophils and may signal pyuria associated with UTI. To detect significant pyuria accurately, 30 seconds to two minutes should be allowed for the dipstick reagent strip to change color, depending in the brand used. Leukocyte casts in the urinary sediment can help localize the area of inflammation to the kidney.

Organisms such as Chlamydia and Ureaplasma urealyticum should be considered in patients with pyuria and negative cultures. Other causes of sterile pyuria include balanitis, urethritis, tuberculosis, bladder tumors, viral infections, nephrolithiasis, foreign bodies, exercise, glomerulonephritis, and corticosteroid and cyclophosphamide use.

Bilirubin and urobilinogen

Urine normally does not contain detectable amounts of bilirubin. Unconjugated bilirubin is water insoluble and cannot pass through the glomerulus; conjugated bilirubin is water soluble and indicates further evaluation for liver dysfunction and biliary obstruction when it is detected in the urine.

Normal urine contains only small amounts of urobilinogen, the end product of conjugated bilirubin after it has passed through the bile ducts and been metabolized in the intestine. Urobilinogen is reabsorbed into the portal

circulation, and a small amount eventually is filtered by the glomerulus. Hemolysis and hepatocellular disease can elevate urobilinogen levels, and antibiotic use and bile duct obstruction can decrease urobilinogen levels.

Microscopic Urinalysis

Microscopic examination is an indispensable part of urinalysis; the identification of casts, cells, crystals, and bacteria aids in the diagnosis of a variety of conditions. To prepare a urine specimen for microscopic analysis, a fresh sample of 10 to 15 mL of urine should be centrifuged at 1,500 to 3,000 rpm for five minutes. The supernatant then is decanted and the sediment resuspended in the remaining liquid.[42] A single drop is transferred to a clean glass slide, and a cover slip is applied.

Cells

Leukocytes may be seen under low- and high-power magnification. Men normally have fewer than two white blood cells (WBCs) per HPF; women normally have fewer than five WBCs per HPF.

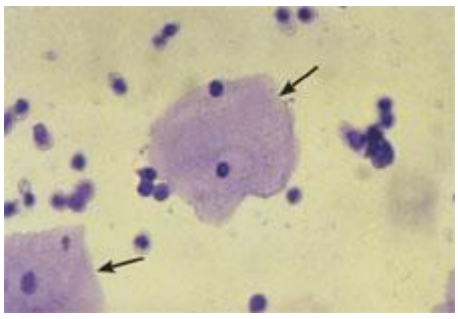


Figure 3. Squamous epithelial cells (arrows) and leukocytes (200 X).

Epithelial cells often are present in the urinary sediment. Squamous epithelial cells are large and irregularly shaped, with a small nucleus and fine granular cytoplasm; their presence suggests contamination. The presence of transitional epithelial cells is normal. These cells are smaller and rounder than squamous cells, and they have larger nuclei. The presence of renal tubule cells indicates significant renal pathology. Erythrocytes are best visualized under high-power magnification. Dysmorphic erythrocytes, which have odd shapes because of their passage through an abnormal glomerulus, suggest glomerular disease.

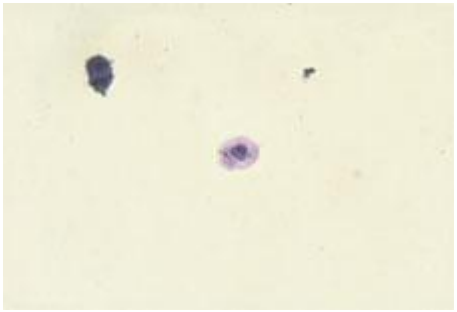


Figure 4. Convoluted renal tubule cells (200 X).

Casts

Casts in the urinary sediment may be used to localize disease to a specific location in the genitourinary tract.[43] Casts, which are a coagulum of Tamm-Horsfall mucoprotein and the trapped contents of tubule lumen, originate from the distal convoluted tubule or collecting duct during periods of urinary concentration or stasis, or when urinary pH is very low. Their cylindrical shape reflects the tubule in which they were formed and is retained when the casts are washed away. The predominant cellular elements determine the type of cast: hyaline, erythrocyte, leukocyte, epithelial, granular, waxy, fatty, or broad.

Urinary Casts and Associated Pathologic Conditions[38]

Type of cast	Composition	Associated conditions
Hyaline	Mucoproteins	Pyelonephritis, chronic renal disease May be a normal finding
Erythrocyte	Red blood cells	Glomerulonephritis May be a normal finding in patients who play contact sports
Leukocyte	White blood cells	Pyelonephritis, glomerulonephritis, interstitial nephritis, renal inflammatory processes
Epithelial	Renal tubule cells	Acute tubular necrosis, interstitial nephritis, eclampsia, nephritic syndrome, allograft rejection, heavy metal ingestion, renal disease
Granular	Various cell types	Advanced renal disease
Waxy	Various cell types	Advanced renal disease
Fatty	Lipid-laden renal tubule cells	Nephrotic syndrome, renal disease, hypothyroidism
Broad	Various cell types	End-stage renal disease

Crystals

Crystals may be seen in the urinary sediment of healthy patients. Calcium oxalate crystals have a refractile square “envelope” shape that can vary in size. Uric acid crystals are yellow to orange-brown and may be diamond- or barrel-shaped. Triple phosphate crystals may be normal but often are associated with alkaline urine and UTI (typically associated with Proteus species). These crystals

are colorless and have a characteristic "coffin lid" appearance. Cystine crystals are colorless, have a hexagonal shape, and are present in acidic urine, which is diagnostic of cystinuria.

Bacteriuria

Under high-powered magnification, gram-negative rods, streptococci, and staphylococci can be distinguished by their characteristic appearance.

Gram staining can help guide antibiotic therapy, but it is not indicated in routine outpatient practice. Clean-catch specimens from female patients frequently are contaminated by vaginal flora. In these patients, five bacteria per HPF represents roughly 100,000 colony-forming units (CFU) per mL, the classic diagnostic criterion for asymptomatic bacteriuria and certainly compatible with a UTI. In symptomatic patients, a colony count as low as 100 CFU per mL suggests UTI, and antibiotics should be considered. The presence of bacteria in a properly collected male urine specimen is suggestive of infection, and a culture should be obtained.

Strength of Recommendations

- Patients with dipstick results of 3+ or greater may have significant proteinuria; further work-up is indicated.[6]
- Patients with microscopic hematuria (at least three red blood cells per high-power field in two of three specimens) should be evaluated to exclude renal and urinary tract disease.[25,26]

- Exercise-induced hematuria is a relatively common, self-limited, and benign condition. Because results of repeat urinalysis after 48 to 72 hours should be negative in patients with this condition, extended testing is not warranted.[35]

Normal urine picture

Volume: 1-2 litres / 24 hours

pH: Newborn: 5-7, Adults: 4.5-8, Average: 6

Specific Gravity: Random urine may vary in specific gravity from 1.003-1.040. 24-hour urine from normal adults with normal diets and normal fluid intake have a specific gravity of 0.016-1.022.

Urobilinogen: In a healthy adult, the normal urobilinogen range obtained is 0.2-1.0 Ehrlich Unit/dl.

Protein: In 24-hour urine, 1-14 md/dl of protein may be excreted by the normal kidney.

Normal urine does not show presence of glucose, blood, ketone, bilirubin, leukocytes and nitrite.

Diseases presenting with combined urinary abnormalities[2]

Glomerular diseases

Clinical Syndromes

Various forms of glomerular injury can also be parsed into several distinct syndromes on clinical grounds. These syndromes, however, are not always mutually exclusive. There is an acute nephritic syndrome producing 1–2 g/24 h of proteinuria, hematuria with red blood cell casts, pyuria, hypertension, fluid retention, and a rise in serum creatinine associated with a reduction in glomerular filtration.

If glomerular inflammation develops slowly, the serum creatinine will rise gradually over many weeks, but if the serum creatinine rises quickly, particularly over a few days, acute nephritis is sometimes called rapidly progressive glomerulonephritis (RPGN); the histopathologic term crescentic glomerulonephritis is the pathologic equivalent of the clinical presentation of RPGN. When patients with RPGN present with lung hemorrhage from Goodpasture's syndrome, antineutrophil cytoplasmic antibodies (ANCA)-associated small-vessel vasculitis, lupus erythematosus, or cryoglobulinemia, they are often diagnosed as having a pulmonary-renal syndrome. Nephrotic syndrome describes the onset of heavy proteinuria (>3.0 g/24 h), hypertension, hypercholesterolemia, hypoalbuminemia, edema/anasarca, and microscopic hematuria; if only large amounts of proteinuria are present without clinical manifestations, the condition is sometimes called nephrotic-range proteinuria.[2]

The glomerular filtration rate (GFR) in these patients may initially be normal or, rarely, higher than normal, but with persistent hyperfiltration and continued nephron loss, it typically declines over months to years. Patients with a basement membrane syndrome either have genetically abnormal basement membranes (Alport's syndrome) or an autoimmune response to basement membrane collagen IV (Goodpasture's syndrome) associated with microscopic hematuria, mild to heavy proteinuria, and hypertension with variable elevations in serum creatinine.

Glomerular-vascular syndrome describes patients with vascular injury producing hematuria and moderate proteinuria. Affected individuals can have vasculitis, thrombotic microangiopathy, antiphospholipid syndrome, or, more commonly, a systemic disease such as atherosclerosis, cholesterol emboli, hypertension, sickle cell anemia, and autoimmunity. Infectious disease-associated syndrome is most important if one has an international perspective. Save for subacute bacterial endocarditis in the Western Hemisphere, malaria and schistosomiasis may be the most common causes of glomerulonephritis throughout the world, closely followed by HIV and chronic hepatitis B and C.

These infectious diseases produce a variety of inflammatory reactions in glomerular capillaries, ranging from nephrotic syndrome to acute nephritic injury, and urinalyses that demonstrate a combination of hematuria and proteinuria.

These six general categories of syndromes are usually determined at the bedside with the help of a history and physical examination, blood chemistries, renal ultrasound, and urinalysis. These initial studies help frame further

diagnostic workup that typically involves some testing of the serum for the presence of various proteins (HIV and hepatitis B and C antigens), antibodies [anti-GBM, antiphospholipid, antistreptolysin O (ASO), anti-DNAse, antihyaluronidase, ANCA, anti-DNA, cryoglobulins, anti-HIV, and anti-hepatitis B and C antibodies] or depletion of complement components (C_3 and C_4). The bedside history and physical examination can also help determine whether the glomerulonephritis is isolated to the kidney (primary glomerulonephritis) or is part of a systemic disease (secondary glomerulonephritis).[2]

When confronted with an abnormal urinalysis and elevated serum creatinine, with or without edema or congestive heart failure, one must consider whether the glomerulonephritis is acute or chronic. This assessment is best made by careful history (last known urinalysis or serum creatinine during pregnancy or insurance physical, evidence of infection, or use of medication or recreational drugs); the size of the kidneys on renal ultrasound examination; and how the patient feels at presentation. Chronic glomerular disease often presents with decreased kidney size. Patients who quickly develop renal failure are fatigued and weak; feel miserable; often have uremic symptoms associated with nausea, vomiting, fluid retention, and somnolence. Primary glomerulonephritis presenting with renal failure that has progressed slowly, however, can be remarkably asymptomatic, as are patients with acute glomerulonephritis without much loss in renal function. Once this initial information is collected, selected patients who are clinically stable, have adequate blood clotting parameters, and are willing and able to receive treatment are encouraged to have a renal biopsy. Biopsies can be done safely with an ultrasound-guided biopsy gun.[2]

Patterns of Clinical Glomerulonephritis[2]

Glomerular Syndromes	Proteinuria	Hematuria	Vascular Injury
Acute Nephritic Syndromes			
Poststreptococcal glomerulonephritis	+/++	++/+++	–
Subacute bacterial endocarditis	+/++	++	–
Lupus nephritis	+/++	++/+++	–
Antiglomerular basement membrane disease	++	++/+++	–
IgA nephropathy	+/++	++/+++	–
ANCA small-vessel vasculitis a. Granulomatosis with polyangiitis (Wegener's) b. Microscopic polyangiitis c. Churg-Strauss syndrome	+/++	++/+++	++++
Henoch-Schönlein purpura	+/++	++/+++	++++
Cryoglobulinemia	+/++	++/+++	++++
Membranoproliferative glomerulonephritis	++	++/+++	–
Mesangioproliferative glomerulonephritis	+	+/++	–
Pulmonary-Renal Syndromes			
Goodpasture's syndrome	++	++/+++	–
ANCA small-vessel vasculitis a. Granulomatosis with polyangiitis (Wegener's) b. Microscopic polyangiitis c. Churg-Strauss syndrome	+/++	++/+++	++++
Henoch-Schönlein purpura	+/++	++/+++	++++
Cryoglobulinemia	+/++	++/+++	++++

Glomerular Syndromes	Proteinuria	Hematuria	Vascular Injury
Nephrotic Syndromes			
Minimal change disease	++++	–	–
Focal segmental glomerulosclerosis	+++/++++	+	–
Membranous glomerulonephritis	++++	+	–
Diabetic nephropathy	++/++++	–/+	–
AL and AA amyloidosis	+++/++++	+	+/++
Light-chain deposition disease	+++	+	–
Fibrillary-immunotactoid disease	+++/++++	+	+
Fabry's disease	+	+	–
Basement Membrane Syndromes			
Anti-GBM disease	++	++/+++	–
Alport's syndrome	++	++	–
Thin basement membrane disease	+	++	–
Nail-patella syndrome	++/+++	++	–
Glomerular Vascular Syndromes			
Atherosclerotic nephropathy	+	+	+++
Hypertensive nephropathy	+/++	+/++	++
Cholesterol emboli	+/++	++	+++
Sickle cell disease	+/++	++	+++
Thrombotic microangiopathies	++	++	+++
Antiphospholipid syndrome	++	++	+++
ANCA small-vessel vasculitis a. Granulomatosis with polyangiitis (Wegener's) b. Microscopic polyangiitis c. Churg-Strauss syndrome	+/++	++/+++	++++
Henoch-Schönlein purpura	+/++	++/+++	++++
Cryoglobulinemia	+/++	++/+++	++++
AL and AA amyloidosis	+++/++++	+	+/++

Glomerular Syndromes	Proteinuria	Hematuria	Vascular Injury
Infectious Disease–Associated Syndromes			
Poststreptococcal glomerulonephritis	+/++	++/+++	–
Subacute bacterial endocarditis	+/++	++	–
HIV	+++	+/++	–
Hepatitis B and C	+++	+/++	–
Syphilis	+++	+	–
Leprosy	+++	+	–
Malaria	+++	+/++	–
Schistosomiasis	+++	+/++	–

Tubulointerstitial diseases of the kidney[2]

Acute Interstitial Nephritis

Acute TIN most often presents with acute renal failure. The acute nature of this group of disorders may be caused by aggressive inflammatory infiltrates that lead to tissue edema, tubular cell injury, and compromised tubular flow, or by frank obstruction of the tubules with casts, cellular debris, or crystals. There is sometimes flank pain due to distention of the renal capsule. Urinary sediment is often active with leukocytes and cellular casts, but depends on the exact nature of the disorder in question.

Chronic Tubulointerstitial Diseases

The clinical features of chronic TIN are more indolent and may manifest with disorders of tubular function, including polyuria from impaired concentrating ability (nephrogenic diabetes insipidus), defective proximal tubular reabsorption leading to features of Fanconi syndrome [glycosuria, phosphaturia,

aminoaciduria, hypokalemia- and type II renal tubular acidosis (RTA) from bicarbonaturia], or non-anion-gap metabolic acidosis and hyperkalemia (type IV RTA) due to impaired ammoniagenesis, as well as progressive azotemia [rising creatinine and blood urea nitrogen (BUN)].

There is often modest proteinuria (rarely >2 g/d) attributable to decreased tubular reabsorption of filtered proteins; however, nephrotic-range albuminuria may occur in some conditions due to the development of secondary focal segmental glomerulosclerosis (FSGS). Renal ultrasonography may reveal changes of "medical renal disease," such as increased echogenicity of the renal parenchyma with loss of corticomedullary differentiation, prominence of the renal pyramids, and cortical scarring in some conditions.

The predominant pathology in chronic TIN is interstitial fibrosis with patchy mononuclear cell infiltration and widespread tubular atrophy, luminal dilation, and thickening of tubular basement membranes. Because of the nonspecific nature of the histopathology, biopsy specimens rarely provide a specific diagnosis. Thus, diagnosis relies on careful analysis of history, drug or toxin exposure, associated symptoms, and imaging studies.

Classification of the Causes of Tubulointerstitial Diseases of the Kidney[2]

I. Acute Tubulointerstitial Disorders (Acute Interstitial Nephritis)

1. Therapeutic agents
    a. Antibiotics (β-lactams, sulfonamides, quinolones, vancomycin, erythromycin, minocycline, rifampin, ethambutol, acyclovir)
    b. Nonsteroidal anti-inflammatory drugs, COX-2 inhibitors
    c. Diuretics (rarely thiazides, loop diuretics, triamterene)
    d. Anticonvulsants (phenytoin, valproate, carbamazepine, phenobarbital)
    e. Miscellaneous (proton pump inhibitors, H_2 blockers, captopril, mesalazine, indinavir, allopurinol)
2. Infection
    a. Bacteria (*Streptococcus, Staphylococcus, Legionella, Salmonella, Brucella, Yersinia, Corynebacterium diphtheriae*)
    b. Viruses (EBV, CMV, hantavirus, polyomavirus, HIV)
    c. Miscellaneous (*Leptospira, Rickettsia, Mycoplasma*)
3. Autoimmune
    a. Tubulointerstitial nephritis with uveitis (TINU)
    b. Sjögren's syndrome
    c. Systemic lupus erythematosus
    d. Granulomatous interstitial nephritis
    e. IgG4-related systemic disease
    f. Idiopathic autoimmune interstitial nephritis
4. Acute obstructive disorders
    a. Light chain cast nephropathy ("myeloma kidney")

b. Acute phosphate nephropathy

c. Acute urate nephropathy

II. Chronic Tubulointerstitial Disorders

1. Vesicoureteral reflux/reflux nephropathy
2. Sickle cell disease
3. Chronic exposure to toxins or therapeutic agents
   a. Analgesics, especially those containing phenacetin
   b. Lithium
   c. Heavy metals (lead, cadmium)
   d. Aristolochic acid (Chinese herbal and Balkan endemic nephropathies)
   e. Calcineurin inhibitors (cyclosporine, tacrolimus)

III. Metabolic Disturbances

1. Hypercalcemia and/or nephrocalcinosis
2. Hyperuricemia
3. Prolonged hypokalemia
4. Hyperoxaluria
5. Cystinosis

IV. Cystic and Hereditary Disorders

1. Polycystic kidney disease
2. Nephronophthisis
3. Adult medullary cystic disease
4. Medullary sponge kidney

V. Miscellaneous

1. Aging

2. Chronic glomerulonephritis
3. Chronic urinary tract obstruction
4. Ischemia and vascular disease
5. Radiation nephritis (rare)

Chapter 4

Methodology

METHODOLOGY

The present study was conducted in the Department of Medicine, Jawaharlal Nehru Medical College, Belgaum on 849 students studying at KLE University, Belgaum during the period of January 2010 to December 2010.

Study design

The study design was one year cross sectional study.

Study period and duration

The present one year study was conducted during the period of January 2010 to December 2010.

Method of collection of data

Source of Data

Undergraduate Medical and Dental students studying at Jawaharlal Nehru Medical College, Belgaum and KLES V. K Institute of Dental Sciences, Belgaum were included.

Sample size

A total of 849 Undergraduate Medical and Dental students were selected for the study.

Sampling procedure

At present there are no studies available to know the prevalence of asymptomatic urinary abnormalities in young healthy adults in India. Therefore, all students from two courses (Undergraduate Medical and Dental) were included in the study. A total of 933 students were considered for the study out of which 84 declined to participate in the study, so a total of 849 students were included in the study.

Selection criteria

Inclusion Criteria

- Healthy students of KLE University in the age group of 18 to 22 years were included.

Exclusion Criteria

- Preexisting renal diseases
- Diabetes Mellitus
- Hypertension
- Fever during last two weeks
- Individuals with symptomatic urinary tract infection
- Pregnant women
- Menstruating women
- History of drug intake in the last two weeks

Method of collection of data

The study was approved by the Institutional Ethics Committee of Jawaharlal Nehru Medical College, Belgaum. Undergraduate Medical and Dental students studying at Jawaharlal Nehru Medical College, Belgaum and KLES V. K. Katti Institute of Dental Sciences, Belgaum were evaluated based on selection criteria. The selected patients were briefed about the nature of the study and a written informed consent was obtained (Annexure-I).

Demographic data like gender and age were collected and recorded on predesigned and pretested proforma (Annexure-II). A thorough clinical examination was conducted and the findings were also recorded.

Urine samples were collected in sterile wide mouthed containers. An early morning mid stream clean catch urine samples were collected and analysed. Urine examination included physical examination (Colour and appearance) and dipstick analysis to look for proteins, blood nitrites and glucose. The urine examination was carried out with ready to use dip sticks URS-9 of TECO Diagnostics. Readings were taken between one to two minutes. Any colour change after two minutes were not considered. The colour change on the dip stick due to chemical reaction was compared to standard chart and results were interpreted and the abnormalities were analysed as below.

Components	Colour	Grading	Semi quantitative result
Protein	Yellow	Negative	-
	Light Green	Trace	< 30 mg/dL
	Green	1+	30 mg/dL
	Dark Green	2+	100 mg/dL
	Blue Green	3+	300 mg/dL
	Darkish blue green	4+	> 2000 mg/dL
Blood	Orange	Negative	-
	Orange background with greenish spots	Non hemolysed trace	10 cells/µL
	Uniform yellow green	Hemolysed trace	10 cells/µL
	Light green	1+	25 cells/µL
	Dark green	2+	80 cells/µL
	Dark Blue	3+	200 cells/µL
Nitrite	White	Negative	-
	Any grade to pink	Positive	
Glucose	Light green	Negative	
	Blue green	Trace	100 mg/dL
	Greenish brown	1+	250 mg/dL
	Brown	2+	500 mg/dL
	Dark brown	3+	1000 mg/dL

Statistical analysis

Data obtained was tabulated on Microsoft excel spreadsheet and the data was analysed and expressed as rates, ratios and percentages.

Chapter 5

Results

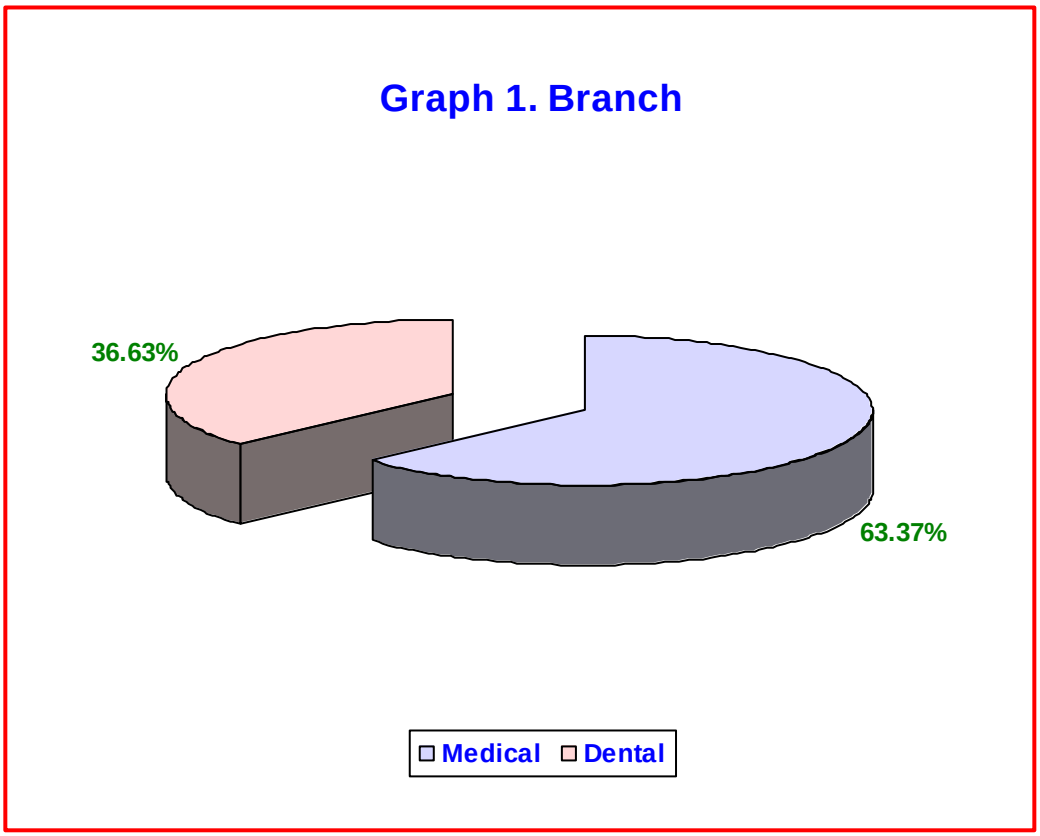
RESULTS

In the present one year cross sectional study 849 healthy students of KLE University were included during the period of January 2010 to December 2010. Urine samples were examined using dipsticks.

The data obtained was tabulated and expressed as rates, ratios and percentages given below.

Table 1. Branch

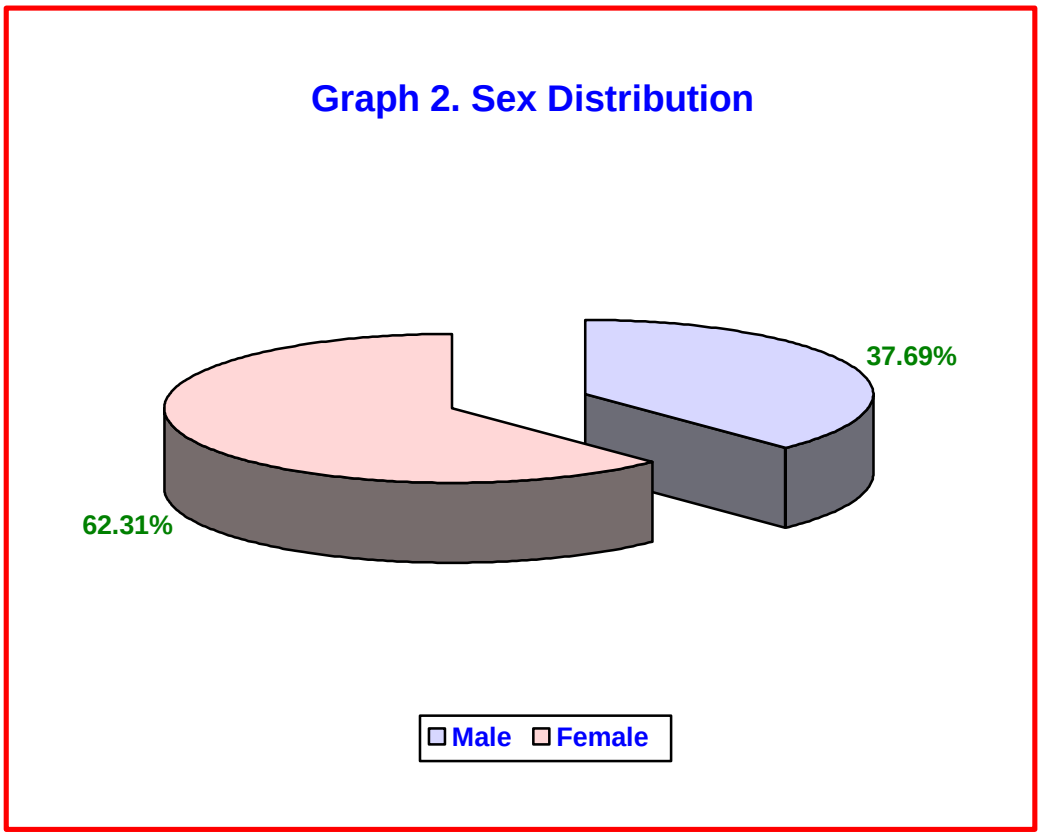
Branch	Distribution (n = 849)	
	Number	**Percentage**
Medical	538	63.37
Dental	311	36.63
Total	**849**	**100.00**



Of these 849 students, 538 were Medical students (63.37%) and 311 were Dental students (36.63%). Medical students enrolled were more than dental students, the reason being that the number of admissions to Medical College is more than that of Dental College.

Table 2. Sex distribution

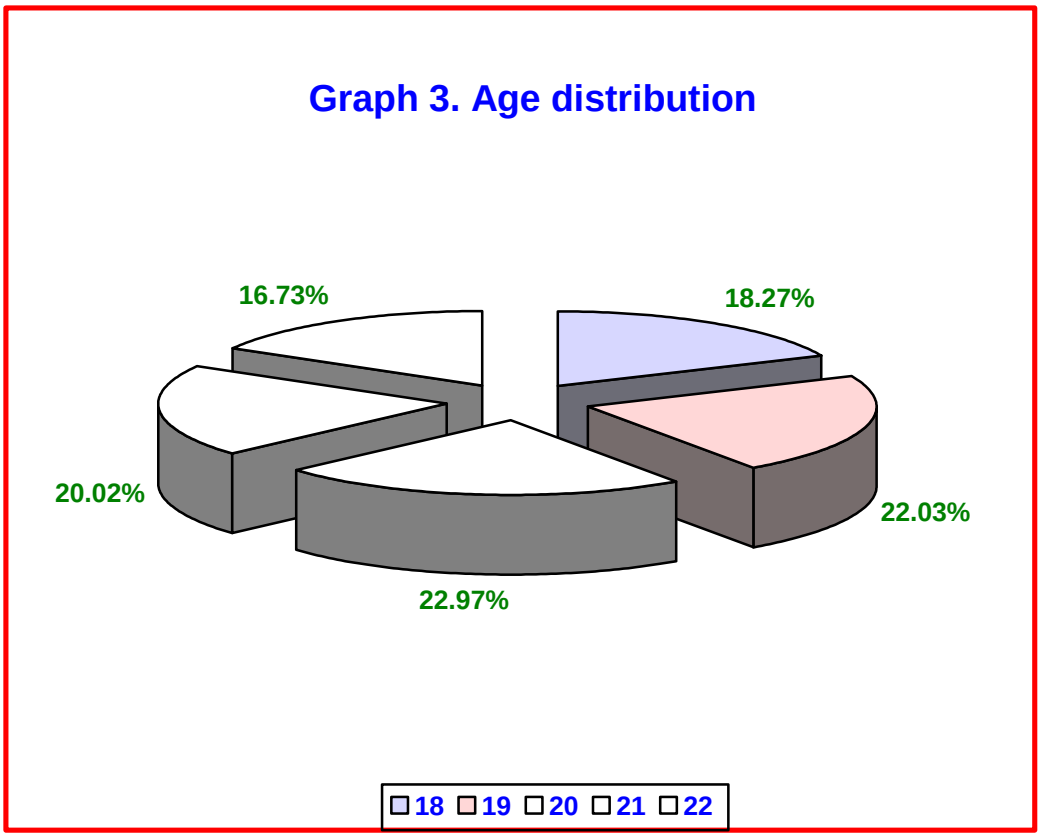
Sex	Distribution (n = 849)	
	Number	**Percentage**
Male	320	37.69
Female	529	62.31
Total	**849**	**100.00**



Of the 849 students, 320 were males (37.69%) and 529 were females (62.31%). Number of female students was more than male students

Table 3. Age distribution

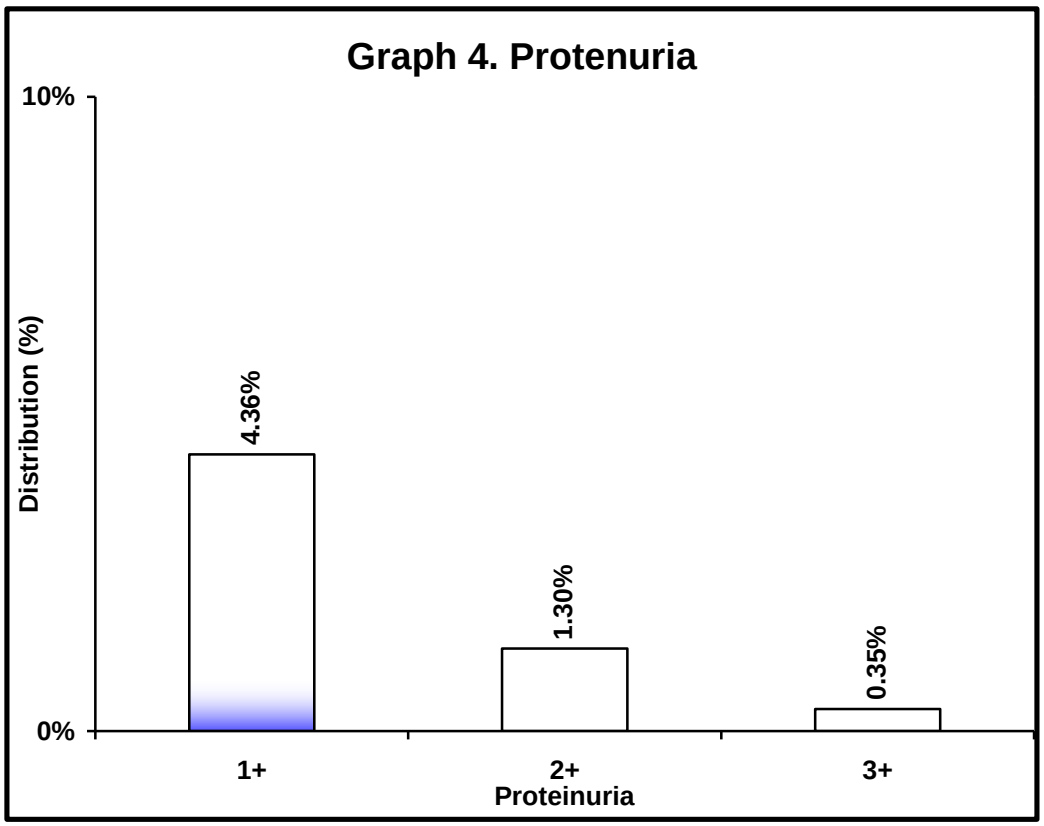
Age group (Years)	Distribution (n = 849)	
	Number	**Percentage**
18	155	18.27
19	187	22.03
20	195	22.97
21	170	20.02
22	142	16.73
Total	**849**	**100.00**



Maximum number of students was in the age group of 20 years (22.97%).

Table 4. Proteinuria

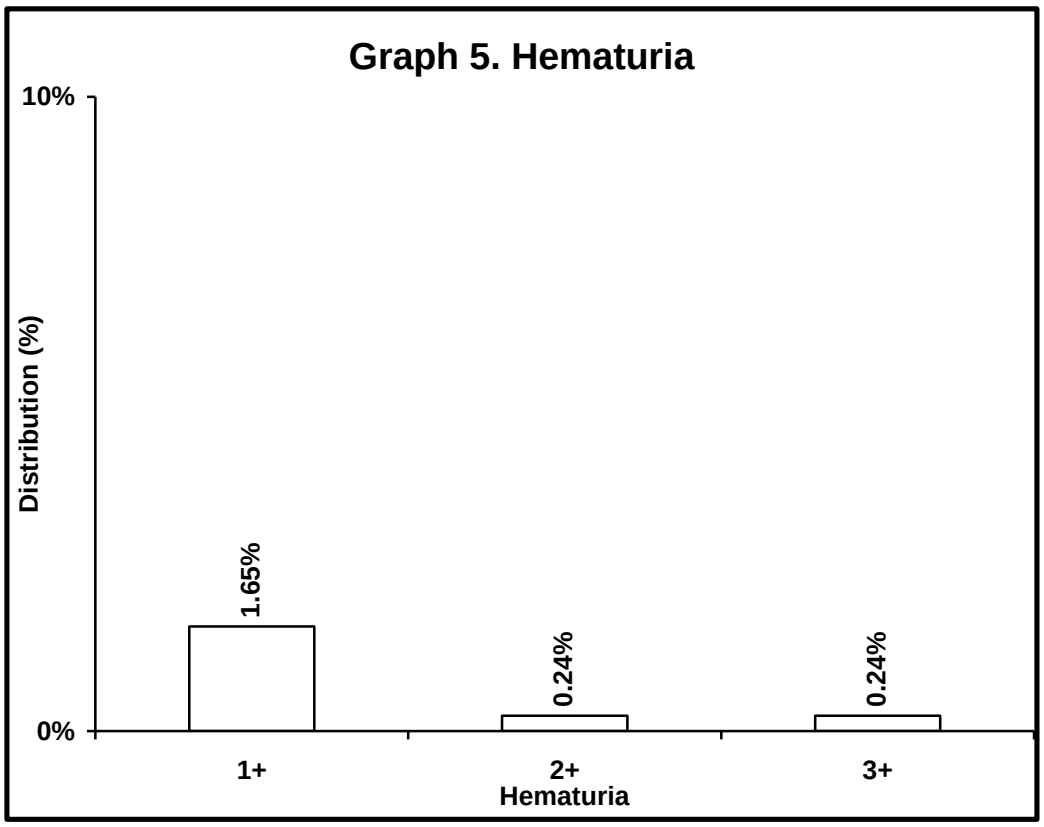
Proteinuria	Distribution (n = 849)	
	Number	**Percentage**
1+	37	4.36
2+	11	1.30
3+	3	0.35
Total	**51**	**6.01**



Out of 51 student who had proteinuria (6.01%), 37 had 1+ grade proteinuria (4.36%), 11 had 2+ proteinuria (1.3%) and 3 had 3+ proteinuria (0.35%). Most of the students had grade 1+ Proteinuria.

Table 5. Hematuria

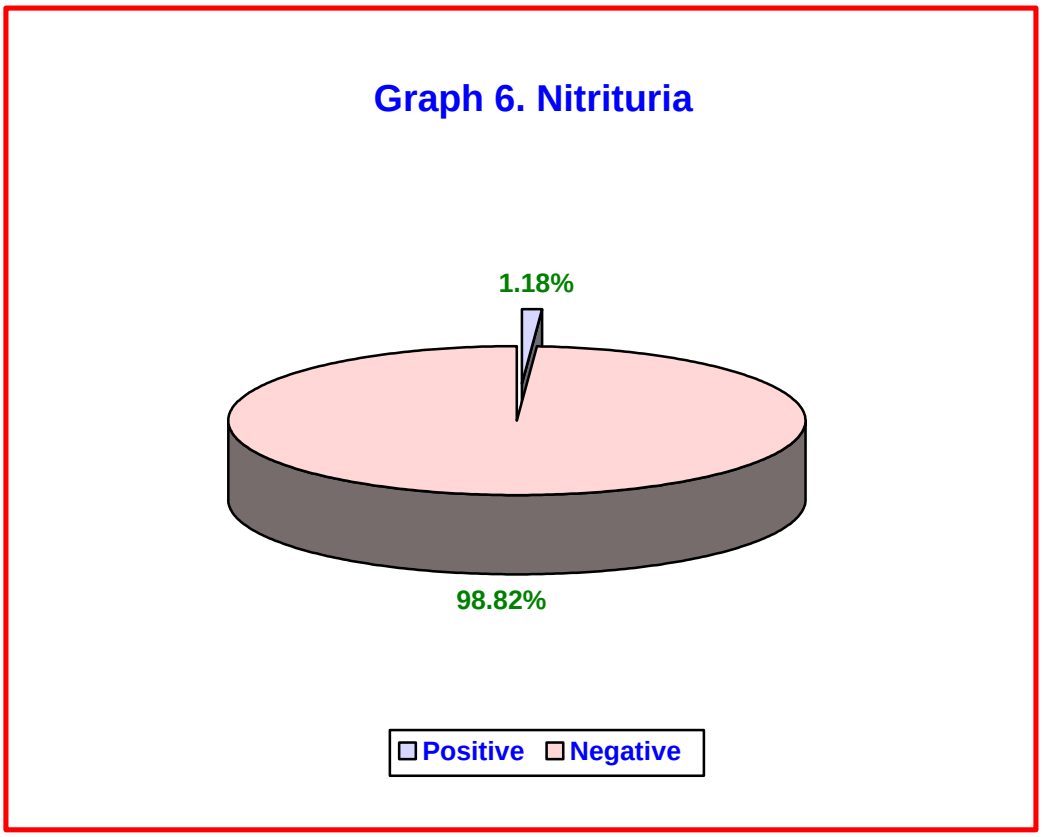
Hematuria	Distribution (n = 849)	
	Number	**Percentage**
1+	14	1.65
2+	2	0.24
3+	2	0.24
Total	**18**	**2.12**



Out of the 18 students who had hematuria (2.12%), 14 had 1+ hematuria (1.65%). Maximum number students had grade 1+ hematuria. 2 students had grade 2+ and other 2 students had grade 3+ hematuria.

Table 6. Nitrituria

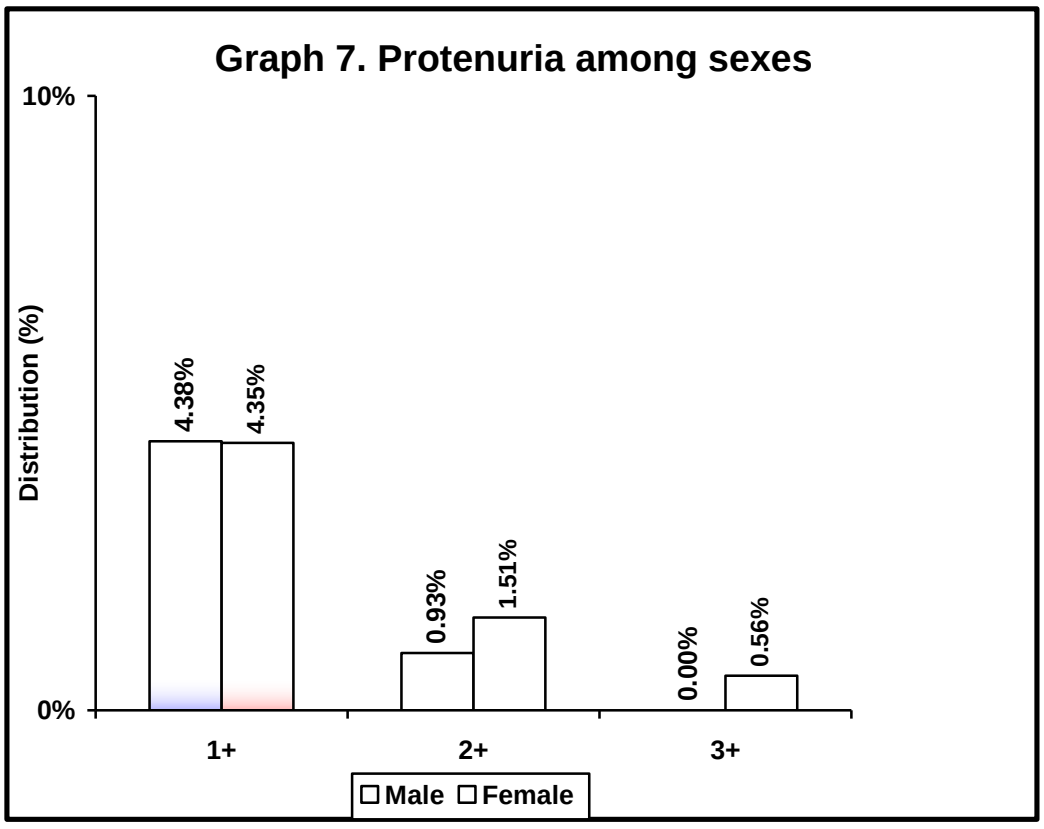
Nitrituria	Distribution (n=849)	
	Number	**Percentage**
Positive	10	1.18
Negative	839	98.82
Total	**849**	**100**



Nitrituria was seen in 10 students (1.18%).

Table 7. Proteinuria among sexes

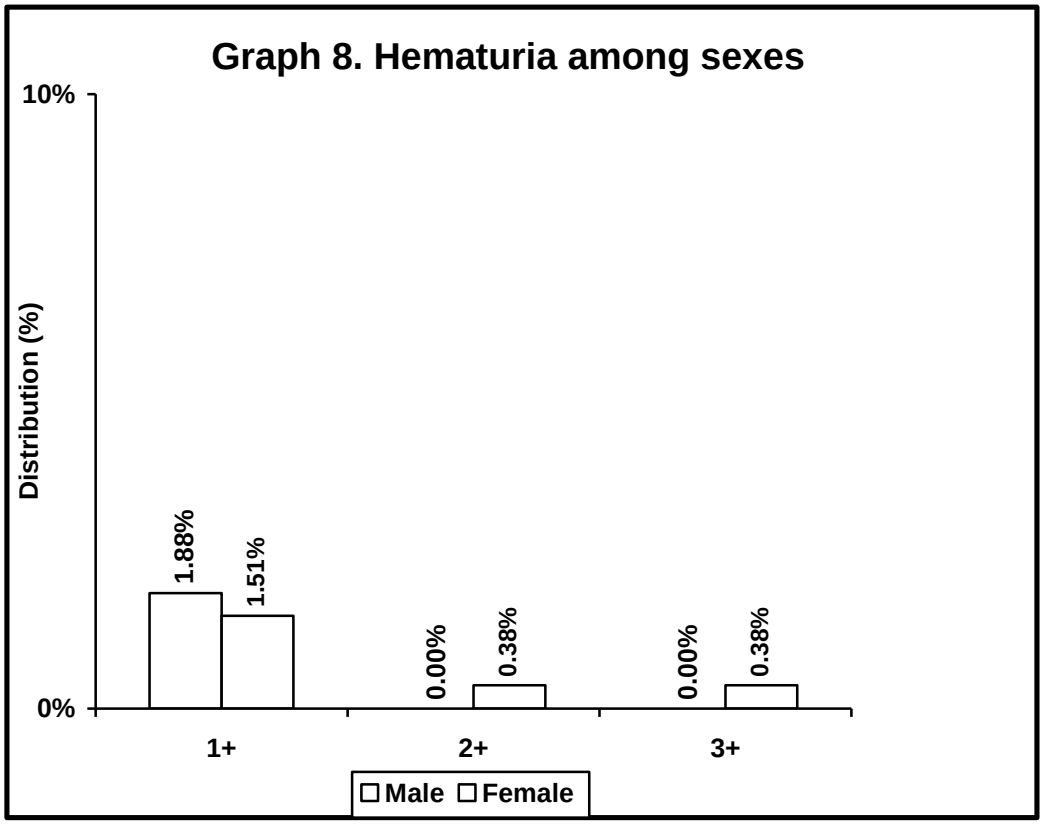
Proteinuria	Male (n=320)		Female (n=529)	
	Number	**Percentage**	**Number**	**Percentage**
1+	14	4.38	23	4.35
2+	3	0.93	8	1.51
3+	0	0.00	3	0.56
Total	**17**	**5.31**	**34**	**6.42**



Proteinuria was more common in females (6.42%) than in males (5.31%).

Table 8. Hematuria among sexes

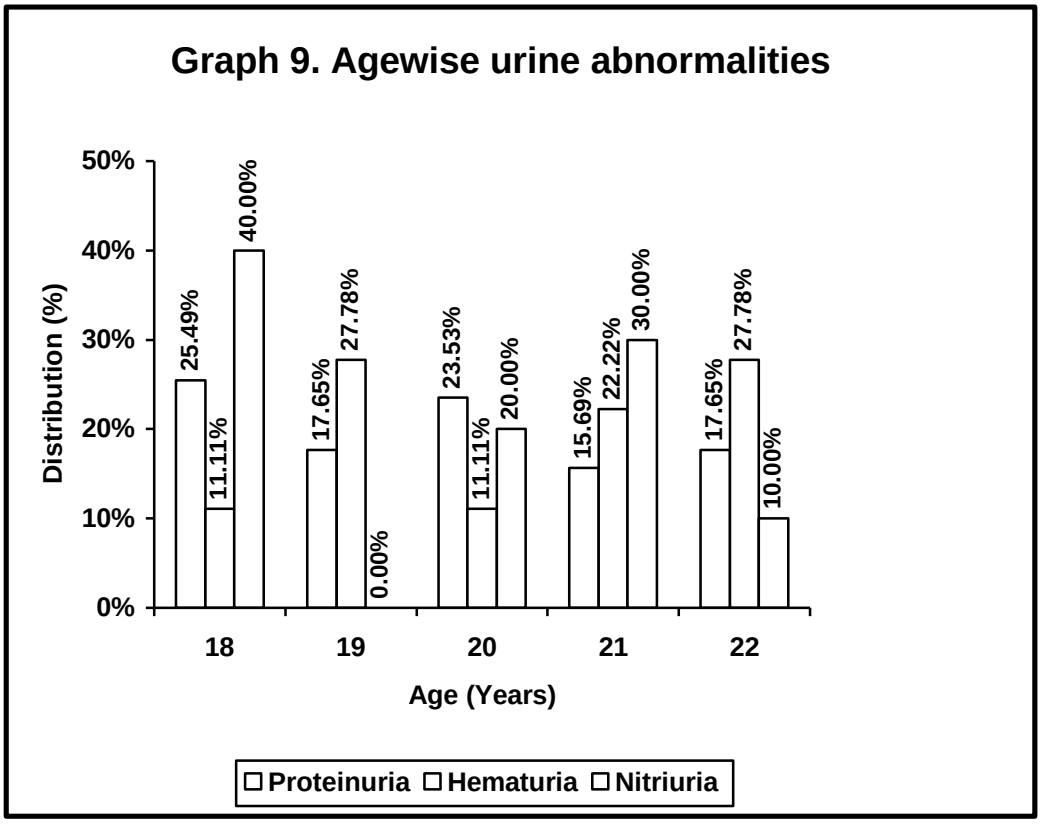
Hematuria	Male (n=320)		Female (n=529)	
	Number	**Percentage**	**Number**	**Percentage**
1+	6	1.88	8	1.51
2+	0	0.00	2	0.38
3+	0	0.00	2	0.38
Total	**6**	**1.88**	**12**	**2.27**



Hematuria was more common in females (2.27%) than in males (1.88%).

Table 9. Agewise urine abnormalities

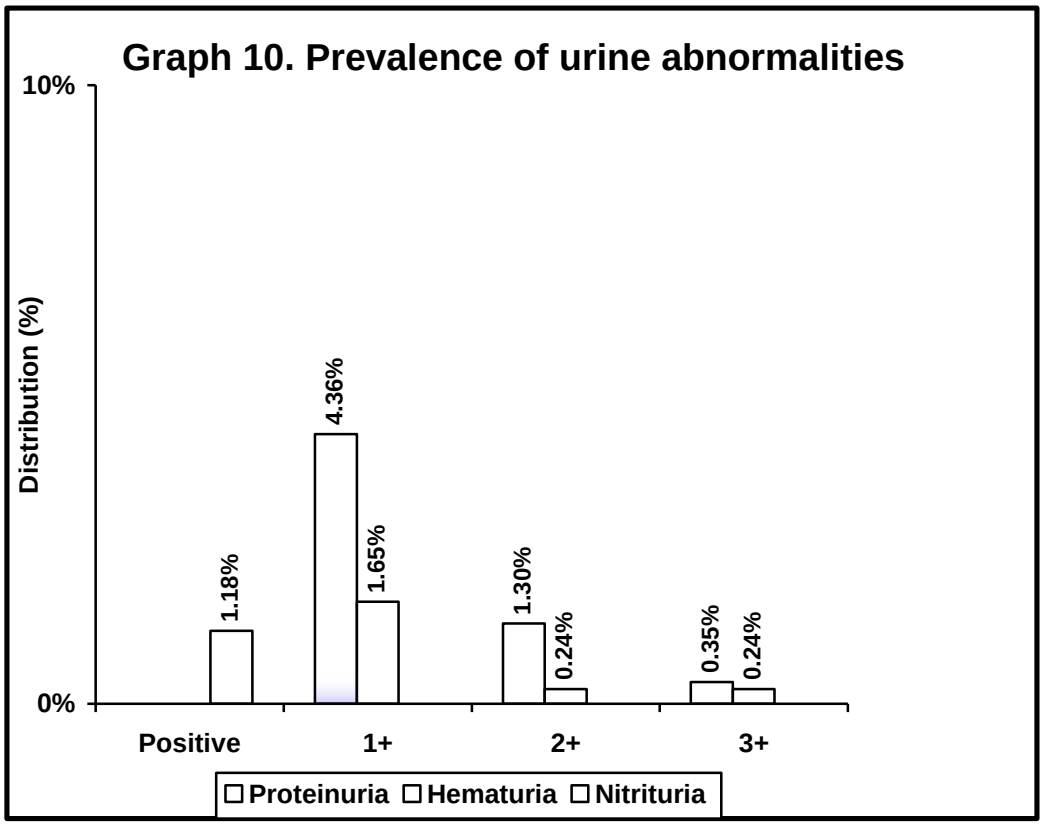
Age (Years)	Proteinuria (n=51)		Hematuria (n=18)		Nitrituria (n=10)	
	No.	%	No.	%	No.	%
18	13	25.49	2	11.11	4	40.00
19	9	17.65	5	27.78	0	0.00
20	12	23.53	2	11.11	2	20.00
21	8	15.69	4	22.22	3	30.00
22	9	17.65	5	27.78	1	10.00
Total	**51**	**100.00**	**18**	**100.00**	**10**	**100.00**



Overall Proteinuria was more common in students aged 18 and 20 years, while hematuria was more common in students aged 19 and 22 years.

Table 10. Prevalence of urine abnormalities

Findings	Proteinuria (n=849)		Hematuria (n=849)		Nitrituria (n=849)		Total (n=849)	
	No.	%	No.	%	No.	%	No.	%
Positive	-	-	-	-	10	1.18	10	1.18
Positive (1+)	37	4.36	14	1.65	0	0.00	51	6.01
Positive (2+)	11	1.30	2	0.24	0	0.00	13	1.53
Positive (3+)	3	0.35	2	0.24	0	0.00	5	0.59
Total	**51**	**6.01**	**18**	**2.12**	**10**	**1.18**	**79**	**9.31**



Out of 849 students studied, a total of 79 students had asymptomatic urinary abnormalities (9.31%).

Chapter 6

Discussion

DISCUSSION

Asymptomatic urinary abnormalities include hematuria, proteinuria, nitrituria and glycosuria alone or in combination. Asymptomatic hematuria and proteinuria have been shown to be a fore-runner for CKD and then to ESRD. ESRD engenders an extremely poor quality of life and shortens life expectancy. Therefore, diagnosis of these abnormalities early can possibly identify individuals at risk, thereby dictating options to mandate a therapeutic protocol. Also use of dipstick for routine screening of urine is a quick and cost effective procedure. The ideal age for screening these patients and an objective assessment of risk in this heterogeneous population continues to be a challenge demanding further investigation.

This study addresses this issue with an attempt to characterize these abnormalities in young individuals.

Routine urinalysis of asymptomatic patients has been shown to detect a variety of urinary abnormalities. A number of studies have demonstrated the usefulness of dipstick in screening asymptomatic patients.[44, 45] Urine dipstick is sensitive for detection of proteins, blood, nitrites and glucose.[46,47] Carl et al screened 2100 healthy adults by dipstick method and found that 10% adults had at least one urine abnormality detected.[48] Because of its simplicity, a general practitioner or a nurse can carry it out. This would reduce the workload on the laboratories.

The study subjects were KLE university students between the age group of 18 -22 years. Students from two courses (Undergraduate Medical and Dental sciences) were included in the study.

Subjects were selected based on a questionnaire to rule out hypertension, diabetes mellitus, renal disease, urinary tract infection, febrile illness (during the past two weeks) and drug intake. Female subjects who were menstruating or pregnant were not considered for the study. Thorough physical examinations including blood pressure recording and systemic examination were carried out to exclude diseases which can cause urinary abnormalities.

Samples were collected in sterile wide mouthed containers. An early morning mid-stream clean catch urine sample was collected and analyzed. Urine examination included physical examination and dipstick analysis to look for presence of proteins, blood, nitrites and glucose. Depending on the color change on the dipstick due to chemical reaction the test was considered positive or negative. The color changes were compared with the chart provided with the dipstick to grade proteinuria, hematuria and glycosuria (Traces to 3+). Nitrituria was reported as either positive or negative.

A total of 933 students were considered for the study out of which 84 declined to participate in the study, so a total of 849 students were included in the study.

Out of 849 students, 320 (37.69%) were males and 529 (62.31%) were females. In contrast to our study, a study done in Pakistan by Hanif R et al [49] had 60% males and 40% females. This minor difference may be because of slightly more number of cases included in that study.

Mean age of the study population was 20 years.

Prevalence of asymptomatic urinary abnormalities was 9.31% in the present study. The prevalence of asymptomatic urinary abnormalities was more in females (10.58%) as compared to males (7.18%). Hanif R et al [49] reported an overall prevalence of urinary abnormalities of 19.3% among patients attending rural health centers in Pakistan. Also in the study, females (26.25%) had a greater prevalence of asymptomatic urinary abnormalities compared to males (14.66%) similar to our study.

In the present study, prevalence of asymptomatic proteinuria was 6.01%. Prevalence of asymptomatic proteinuria was 5.31% among males and 6.42% among females. In comparison to our study, Singh NP et al[50] reported 2.25% prevalence of proteinuria among North Indian population of the 5252 subjects screened with a mean age of 54 years. Another study[51] done by Ahmed et al on south Indian population showed a prevalence of 4.3%.

Oviasu et al[52] reported that routine urinalysis of asymptomatic adolescents in Nigeria detected proteinuria in 4.7% adolescents. Another study[53] done by Alwall N et al in Swedes population (n=1456, 49% men), reported a proteinuria prevalence of 0.82%.

Von Bonsdorff M et al[38], reported a 0.38% prevalence of asymptomatic proteinuria among 36,147 Finnish men screened (age-20 years). Another study[54] by Chen BTM et al reported a prevalence of 0.81% among Singapore males in age group of 17 -25 years (n=23204). These studies screened a relatively large number of subjects which may be the reason for lower prevalence of proteinuria.

A study[55] by Silverberg DS et al reported asymptomatic proteinuria of 0.53% among 23,427 Canada school girls in the age group of 5 – 14 years.

Another study[56] by Kulin CM et al done on 804 Virginia school girls aged 6-8 years reported a 2.99% prevalence of asymptomatic proteinuria. The difference in the results of these studies in contrast to our study could be because the subjects studied were young children.

In the present study, prevalence of asymptomatic hematuria was 2.12%. Females had higher prevalence rate (2.27%) of asymptomatic hematuria compared to males (1.88%). In a study by Prakash J et al[57], prevalence of microscopic hematuria was reported as 3% among 315 elderly Indians screened (age >60 years).

In a study by Mohr DN[30], asymptomatic hematuria was reported to be 12.37% among 23,204 Minnesota residents screened (58% men, women; men aged >35 and women >55). This obvious difference may be because of the higher age of the population screened as elderly more predisposed to glomerular and urological diseases.

Alwall N et al[59] reported prevalence of asymptomatic hematuria as 2.4% among 1456 Swedes (49% men). The prevalence of this study was similar to our study.

In a study by Froom P et al[58], prevalence of asymptomatic hematuria was 16.1% among 1000 Israeli air force men in the age group of 18 – 33 years. The reason for prevalence of hematuria being high in this study may be because of relatively small sample size. In another similar study Chen BTM et al[54] reported prevalence of asymptomatic hematuria as 0.289% among 23,204 Singapore male military recruits in age group of 17 -25 years.

In a study by Silverberg DS et al[55], prevalence of asymptomatic hematuria was reported as 0.3% among 23,427 Canada school girls aged 5 – 14 years. Another study by Vivante A et al[60] showed asymptomatic hematuria of 0.2% among Israeli women.

The differences in the prevalence of hematuria in various studies mentioned above may be because of screening heterogeneous population of different age group.

In the present study, asymptomatic nitrituria which indicates asymptomatic Urinary tract infection was seen only in female students with a prevalence of 1.18%. In various studies[61, 62], prevalence of asymptomatic Urinary tract infection have been reported as 5% in young females and less than 0.01% in young males.

None of the students in this study had asymptomatic glycosuria. In contrast to our study, Hanif R et al[49] reported a prevalence of 2% glycosuria among patients attending rural health centers in Pakistan. In the study, the prevalence of glycosuria was more in patients aged above 40 years. This may be due to the reason that Diabetes Mellitus was not ruled out in the population screened.

Also all the 79 students with urinary abnormality in the present study had a single urinary abnormality, none of the students had a combination of two or more urinary abnormalities.

In the present study, the prevalence of asymptomatic proteinuria and hematuria was significantly higher compared to previous studies. Previous

studies to compare the prevalence of asymptomatic proteinuria and hematuria in young Indian adults are not available. This significantly higher prevalence of asymptomatic proteinuria and hematuria needs further follow-up and evaluation of those having these abnormalities.

Proteinuria is a cardinal feature of renal disease and an important clinical finding because it is a marker for the presence of renal disease; it mediates progressive renal dysfunction, [63, 64] and is an independent and powerful risk factor for the development of cardiovascular disease.[65]

In the present study, majority of students who had asymptomatic proteinuria (4.38%) were having mild proteinuria (1+). Since these milder forms of proteinuria tend to be neglected when found on routine examination, these patients are predisposed to develop complications and early progression into ESRD. Proteinuria is a strong independent predictor and risk factor of End Stage Renal Disease (ESRD) [66]. Therefore asymptomatic proteinuria warrants further work up and intervention to reduce the incidence of ESRD. A long term follow-up study[67] of young students who were diagnosed as proteinuria at the time of entering the university showed a higher mortality (43%) due to renal disease.

In a study[60], asymptomatic hematuria among young adults was found to be an independent potential risk for development of future ESRD due to glomerular etiology. Various other studies[30, 32, 33] have also shown that asymptomatic hematuria is associated with significant risk of ESRD and bladder tumors.

In the present study, there was a significantly higher prevalence of asymptomatic urinary abnormalities among apparently healthy young adults. At

present the prognosis of young patients with asymptomatic urinary abnormalities in Indian population is not known due to lack of long term follow-up studies, so outcome of these students with asymptomatic urinary abnormalities is not possible.

Limitations of the present study were:

1. Small sample size
2. Limited study period
3. Lack of follow up of the students with asymptomatic urinary abnormalities

False positive results of dipstick cannot be ruled out, further confirmation by repeat dipstick analysis or a detailed urine examination is required.

Chapter 7

Conclusion

CONCLUSION

1. The prevalence of asymptomatic urinary abnormalities was 9.31%. Females had a higher prevalence of asymptomatic urinary abnormalities (10.58% vs 7.18% respectively).

2. Prevalence of asymptomatic proteinuria was 6.01%. Asymptomatic proteinuria was more common in females (6.42%) compared to males (5.31%).

3. Prevalence of asymptomatic hematuria was 2.12%. Females had higher prevalence (2.27%) of asymptomatic hematuria compared to males (1.88%).

4. In the present study, asymptomatic nitrituria was found only in female students (prevalence- 1.18%)

5. Asymptomatic glycosuria was not found in of the subjects.

6. Those who had urinary abnormalities had only one urinary abnormality and no one had more than one urinary abnormality.

7. These students who had urinary abnormalities need further evaluation in detail.

Chapter 8

Summary

SUMMARY

Asymptomatic urinary abnormalities are a common finding in clinical practice.

The study subjects were Undergraduate Medical and Dental students of KLE University between the age group of 18 – 22 years.

The study group consisted of 849 students. Female students (62.31%) were more than male students (37.69%).

The various asymptomatic urinary abnormalities were observed in 79 students (9.31%).

Female students were having more urinary abnormalities (10.58%) than male students (7.18%).

The commonest urinary abnormality that was observed was Proteinuria (6.01%) followed by Hematuria (2.12%) and then by Nitrituria (1.18%). None of the students had glycosuria.

Both proteinuria and hematuria were more commonly observed in females (6.42% and 2.27% respectively) compared to males (5.31% and 1.88% respectively).

Nitrituria was observed only in females (1.18%).

These 79 students who had urinary abnormalities had only single abnormality.

The limitations of the study were small number of subjects enrolled in the study, no long term follow-up of the subjects was done and false positive results of the dipsticks cannot be ruled out, hence the outcome of these 79 students with urinary abnormalities cannot be predicted.

Chapter 9

Bibliography

BIBLIOGRAPHY

1. Ahmed Z, Lee J. Asymptomatic urinary abnormalities. Hematuria and proteinuria. Med Clin North Am 1997; 81: 641–52.
2. Longo DL, Kasper DL, Jameson JL, Fauci AS, Hauser SL, Loscalzo J. Harrison's Principles of Internal Medicine. 18th Ed. New Delhi: McGraw Hill Medical Publishing Division, 2011.
3. Abitbol C, Zilleruelo G, Freundlich M. Quantitation of proteinuria with urine protein/creatinine ratios and random testing with dipsticks in children. J Pediatr 1990; 116: 243-7.
4. Bard RH: The significance of asymptomatic hematuria in women and its economic implications: A ten-year study. Arch Intern Med 1988; 148: 2629-32.
5. Simerville JA, Maxted WC, Pahira JJ. Urinalysis: A Comprehensive Review. Am Fam Physician 2005; 71(6): 1153-62.
6. Gorelick MH, Shaw KN. Screening tests for urinary tract infection in children: A meta-analysis. Pediatrics 1999; 104(5): e54.
7. Lifshitz E, Kramer L. Outpatient urine culture: does collection technique matter? Arch Intern Med 2000; 160: 2537–40.
8. Rabinovitch A. Urinalysis and collection, transportation, and preservation of urine specimens: approved guideline. 2d ed. Wayne, Pa.: National Committee for Clinical Laboratory Standards, 2001. NCCLS document GP16-A2.

9. Hanno PM, Wein AJ, Malkowicz SB. Clinical manual of urology. 3rd ed. New York: McGraw-Hill; 2001.

10. Woolhandler S, Pels RJ, Bor DH, Himmelstein DU, Lawrence RS. Dipstick urinalysis screening of asymptomatic adults for urinary tract disorders. I. Hematuria and proteinuria. JAMA 1989; 262: 1214–9.

11. Agarwal R, Panesar A, Lewis RR. Dipstick proteinuria: can it guide hypertension management? Am J Kidney Dis 2002; 39: 1190–5.

12. Pels RJ, Bor DH, Woolhandler S, Himmelstein DU, Lawrence RS. Dipstick urinalysis screening of asymptomatic adults for urinary tract disorders. II. Bacteriuria. JAMA 1989; 262: 1221–4.

13. Sultana RV, Zalstein S, Cameron P, Campbell D. Dipstick urinalysis and the accuracy of the clinical diagnosis of urinary tract infection. J Emerg Med 2001; 20: 13–9.

14. Smith P, Morris A, Reller LB. Predicting urine culture results by dipstick testing and phase contrast microscopy. Pathology 2003; 35: 161–5.

15. Van Nostrand JD, Junkins AD, Bartholdi RK. Poor predictive ability of urinalysis and microscopic examination to detect urinary tract infection. Am J Clin Pathol 2000; 113: 709–13.

16. Eidelman Y, Raveh D, Yinnon AM, Ballin J, Rudensky B, Gottehrer NP. Reagent strip diagnosis of UTI in a high-risk population. Am J Emerg Med 2002; 20: 112–3.

17. Lammers RL, Gibson S, Kovacs D, Sears W, Strachan G. Comparison of test characteristics of urine dipstick and urinalysis at various test cutoff points. Ann Emerg Med 2001; 38: 505–12.

18. Semeniuk H, Church D. Evaluation of the leukocyte esterase and nitrite urine dipstick screening tests for detection of bacteriuria in women with suspected uncomplicated urinary tract infections. J Clin Microbiol 1999; 37: 3051–2.

19. Leman P. Validity of urinalysis and microscopy for detecting urinary tract infection in the emergency department. Eur J Emerg Med 2002; 9: 141–7.

20. Kavouras SA. Assessing hydration status Curr Opin Clin Nutr Metab Care 2002; 5: 519–24.

21. Sheets C, Lyman JL. Urinalysis. Emerg Med Clin North Am 1986; 4: 263–80.

22. Kiel DP, Moskowitz MA. The urinalysis: a critical appraisal. Med Clin North Am 1987; 71:607–24.

23. Benejam R, Narayana AS. Urinalysis: the physician's responsibility. Am Fam Physician 1985; 31: 103–11.

24. Mariani AJ, Mariani MC, Macchioni C, Stams UK, Hariharan A, Moriera A. The significance of adult hematuria: 1,000 hematuria evaluations including a risk-benefit and cost-effectiveness analysis. J Urol 1989; 141: 350–5.

25. Grossfeld GD, Litwin MS, Wolf JS, Hricak H, Shuler CL, Agerter DC, et al. Evaluation of asymptomatic microscopic hematuria in adults: the American Urological Association best practice policy—part I: definition, detection, prevalence, and etiology. Urology 2001; 57: 599–603.

26. Grossfeld GD, Litwin MS, Wolf JS Jr, Hricak H, Shuler CL, Agerter DC, et al. Evaluation of asymptomatic microscopic hematuria in adults: the American Urological Association best practice policy—part II: patient evaluation, cytology, voided markers, imaging, cystoscopy, nephrology evaluation, and follow-up. Urology 2001; 57: 604–10.

27. Fassett RG, Horgan BA, Mathew TH. Detection of glomerular bleeding by phase-contrast microscopy. Lancet 1982; 1: 1432–4.

28. Brendler, CB. Evaluation of the urologic patient: history, physical examination and urinalysis. In: Campbell MF, Walsh PC. Campbell's Urology. 7th ed. Philadelphia: Saunders, 1998. p. 144–56.

29. Sutton JM. Evaluation of hematuria in adults. JAMA 1990; 263: 2475–80.

30. Mohr DN, Offord KP, Owen RA, Melton LJ 3d. Asymptomatic micro-hematuria and urologic disease. A population-based study. JAMA 1986; 256: 224–9.

31. Khan MA, Shaw G, Paris AM. Is microscopic haematuria a urological emergency? BJU Int 2002; 90: 355–7.

32. Mohr DN, Offord KP, Melton LJ 3d. Isolated asymptomatic microhematuria: a cross-sectional analysis of test-positive and test-negative patients. J Gen Intern Med. 1987; 2: 318–24.

33. Messing EM, Young TB, Hunt VB, Emoto SE, Wehbie JM. The significance of asymptomatic microhematuria in men 50 or more years old: findings of a home screening study using urinary dipsticks. J Urol 1987; 137: 919–22.

34. Khadra MH, Pickard RS, Charlton M, Powell PH, Neal DE. A prospective analysis of 1,930 patients with hematuria to evaluate current diagnostic practice. J Urol 2000; 163: 524–7.

35. Siegel AJ, Hennekens CH, Solomon HS, Van Boeckel B. Exercise-related hematuria. Findings in a group of marathon runners. JAMA 1979; 241: 391–2.

36. House AA, Cattran DC. Nephrology: 2. Evaluation of asymptomatic hematuria and proteinuria in adult primary care. CMAJ. 2002; 166: 348–53.

37. Carroll MF, Temte JL. Proteinuria in adults: a diagnostic approach. Am Fam Physician 2000; 62: 1333–40.

38. Von Bonsdorff M, Koskenvuo K, Salmi HA, Pasternack A. Prevalence and causes of proteinuria in 20-year old Finnish men. Scand J Urol Nephrol. 1981; 15: 285–90.

39. Springberg PD, Garrett LE Jr, Thompson AL Jr, Collins NF, Lordon RE, Robinson RR. Fixed and reproducible orthostatic proteinuria: results of a 20-year follow-up study. Ann Intern Med 1982; 97: 516–9.

40. Rytand DA, Spreiter S. Prognosis in postural (orthostatic) proteinuria: forty to fifty-year follow-up of six patients after diagnosis by Thomas Addis. N Engl J Med 1981; 305: 618–21.

41. Gallagher EJ, Schwartz E, Weinstein RS. Performance characteristics of urine dipsticks stored in open containers. Am J Emerg Med 1990; 8:121–3.

42. Fogazzi GB, Garigali G. The clinical art and science of urine microscopy. Curr Opin Nephrol Hypertens 2003; 12: 625–32.

43. Graham JC, Galloway A. ACP best practice no. 167: the laboratory diagnosis of urinary tract infection. J Clin Pathol 2001; 54: 911–9.

44. Waugh JJ, Clark TJ, Divakaran TG, Khan KS, Kilby MD. Accuracy of urinalysis dipstick techniques in predicting significant proteinuria in pregnancy. Obstet Gynecol 2004; 103: 769-77.

45. Molvneux EM, Robson WJ. A dipstick test for urinary tract infections. J Accid Emerg Med 1995; 12: 191-3.

46. Lum G. How effective are screening tests for microalbuminuria in random urine specimens? Ann Clin lab Sci 2000; 30: 406-11.

47. Misdraji J, Nguyen PL. Urinalysis. When and when not to order. Postgrad Med 1996; 100: 173-6.

48. Carl RS, Silverberg DS, Kaminsky R, Aviram A. Routine urinalysis (dipstick) findings in mass screening of health adults. Clin chem. 1987; 33: 2106-8.

49. Hanif R, Ally SH, Jalal-ud-din, Khan K. Effectiveness of routine urine analysis of patients attending rural health centres in Abbottabad. J Ayub Med Coll Abbottabad 2006; 18 (3): 63-64.

50. Singh NP**,** Ingle GK**,** Saini VK**,** Jami A**,** Beniwal P**,** Lal M and Meena GS. Prevalence of low glomerular filtration rate, proteinuria and associated risk factors in North India using Cockcroft-Gault and Modification of Diet in Renal Disease equation: an observational, cross-sectional study. BMC Nephrology 2009; 10: 4.

51. Ahmed I, John GT, Kirubakaran MG. Prevalence of proteinuria in rural adult population in Tamil Nadu. Ind J Med Res 2006; 124: 185-8.

52. Oviasu e, Oviasu SV. Urinary abnormalities in asymptomatic adolescent Nigerians. West Afr J Med 1994; 13:152-5.

53. Alwall N, LohiA. A population study on renal and urinary tract diseases. I. Acta Med Scand. 1973; 194: 525-8.

54. Chen BTM, Ooi BS, Tan KK, Lim CH. Comparative studies of asymptomatic proteinuria and hematuria. Arch Intern Med 1974; 134: 901-5

55. Silverberg DS, Allard MJ, Ulan RA, Beamish WE, Lentle BC, McPhee MS et al. City-wide screening for urinary abnormalities in school girls. Can Med Assoc J 1973; 109: 981-5.

56. Kunin CM. Emergence of bacteriuria, proteinuria and symptomatic urinary tract infections among a population of school girls followed for 7 years. Pediatrics 1968; 41: 968-76.

57. Prakash J, Singh AK, Saxena RK, Usha. Glomerular diseases in the elderly in India. International Urology and Nephrology 2003; 35: 283–8.

58. Froom P, Ribak J, Benbassat J. Significance of microhematuria in young adults. Br Med J 1984; 288: 20-2.

59. Alwall N, Lohi A. A population study on renal and urinary tract diseases, II. Acta Med Scand 1973; 194: 529-35.

60. Vivante A, Afek A, Frenkel-Nir Y, Tzur D, Farfel A, Golan E, et al. Persistent asymptomatic isolated microscopic hematuria in Israeli adolescents and young adults and risk of end – stage renal disease. JAMA 2011; 306(7): 729-36.

61. Vorland LH, Carlson K, Aalen O. An epidemiological survey of urinary tract infections among outpatients in Northern Norway. Scand J Infect Dis 1985; 17: 277-83.

62. Valkenburg HA. Epidemiology of urinary tract infections. Urol 1987; 13 (Suppl 1): 5-8.

63. Remuzzi G. Nephropathic nature of proteinuria. Curr Opin Nephrol Hypertens 1999; 8: 655–63.

64. Remuzzi G, Bertani T. Pathophysiology of progressive nephropathies. N Engl J Med 1998; 339: 1448–56.

65. Brantsma AH, Bakker SJ, de Zeeuw D, de Jong PE, Gansevoort RT; PREVEND Study Group. Extended prognostic value of urinary albumin excretion for cardiovascular events. J Am Soc Nephrol 2008; 19: 1785–91.

66. Iseki K, Ikemiya Y, Iseki C, Takishitas S. Proteinuria and Risk of developing end stage renal disease. Kidney Intl 2003; 63: 1468-74.

67. Levitt JI: The prognostic significance of proteinuria in young college students. Ann Intern Med 1967; 66(4): 685-96.

Annexures

Annexure I

ANNEXURE I – CONSENT FORM

Title of the topic:-

"PREVALENCE OF ASYMPTOMATIC URINARY ABNORMALITIES AMONG KLE UNIVERSITY STUDENTS, A ONE YEAR CROSS SECTIONAL STUDY AT KLE UNIVERSITY, BELGAUM"

Principle Investigators:-

Name: Dr Hemanth Kumar. S. R

Guide: Dr Mallikarjun. S. Khanpet **MD, DNB (Nephrology)**

Purpose of study:-

To study the prevalence of asymptomatic urinary abnormalities in healthy young adults.

You have been requested to participate in research because your profile matches with the study group. During the study you will be asked some questions and you are supposed to answer to the best of your knowledge. Your participation in the research is absolutely voluntary. Your decision to participate in the study or otherwise will not affect your relationship with KLES Dr. Prabhakar Kore hospital and MRC. If you decide not to participate, you are free to withdraw at any time.

Procedure Involved:-

Urine samples will be collected and analysed by dipstick method

Risks and benefits:-

This study does not involve any risk to the subjects involved. Benefits of this study are many. The study helps to identify the prevalence of asymptomatic urinary abnormalities in healthy young adults which will further emphasize the importance of routine use of screening test in healthy individuals. It will further help in early detection of urinary abnormalities and initiation of early treatment and prevention of progression to chronic kidney disease.

Alternatives:-

Even if you decline to participate, you will not lose any benefits. You will be told about all the new information that may affect your decision to participate in the study.

Privacy and confidentiality:-

The only people to know that you are a research subject are the members of research team. No information about you or provided by you during the research will be disclosed to others without your written permission except:

1. In emergency to protect your rights and welfare.

2. If required by law.

Financial incentives for participation:-

You will not be paid any monetary benefits or free gifts for participation in the research. You will not be reimbursed for expenses.

Authorization to publish results:-

When the results of the research are published or discussed in a conference, no information will be displayed that would disclose your identity. Any information that is obtained in connection with this study and that can be identified with you will remain confidential.

In case you have any questions related to the study you can contact Dr HEMANTH KUMAR. S R (Ph.9964473885).Or Dept. of medicine (0831-2473777) Extension no: 1520

In case you have any questions about your rights as a study participant you can contact Dr V.D.patil (0831-2471350)

CONSENT STATEMENT:

I, the undersigned, have been explained in my own vernacular language about the study and my participation in the study is voluntary. If I want I can withdraw at any time. Also I have been given enough time to clear my doubts about the study and my rights as a study participant.

Signature or the left thumb impression of the participant or legally authorized representative.

Participant's name_____ Signature_____

Witness name_____Signature_____

Experimenter's name_____ Signature_____

Place _____

Date _____

Annexures

Annexure II

ANNEXURE II – PROFORMA

Title of the Topic: Prevalence of asymptomatic urinary abnormalities among KLE university students, a one year cross sectional study at KLE University, Belgaum

A. IDENTIFICATION

1. Name:
2. Age:
3. Sex:
4. Religion:
5. Address:
6. Occupation:

B. HISTORY OF:

1. Fever during the last 2 weeks Yes/No
2. Drug intake during last 2 weeks Yes/No
3. Kidney disease in the past Yes/No
4. Diabetes Mellitus Yes/No
5. Hypertension Yes/No
6. Generalized swelling of the body in the past Yes/No
7. Swelling of lower limbs in the past Yes/No
8. Passing Blood or pus in Urine in the past Yes/No
9. In case of Women
    a. Are you menstruating at the time of collection of urine sample Yes/No
    b. Are you pregnant Yes/No

10. Any significant past history you want to mention

C. **GENERAL PHYSICAL EXAMINATION:**

Pulse:

BP:

Temp:

RS:

CVS:

PA:

CNS:

D. **URINE EXAMINATION:**

a) Colour

b) Appearance

D. **URINE ANALYSIS BY DIPSTICK:**

ABNORMALITY	Result(Positive/Negative)
1. R.B.C	
2. Protein	
3. Nitrites	
4. Glucose	

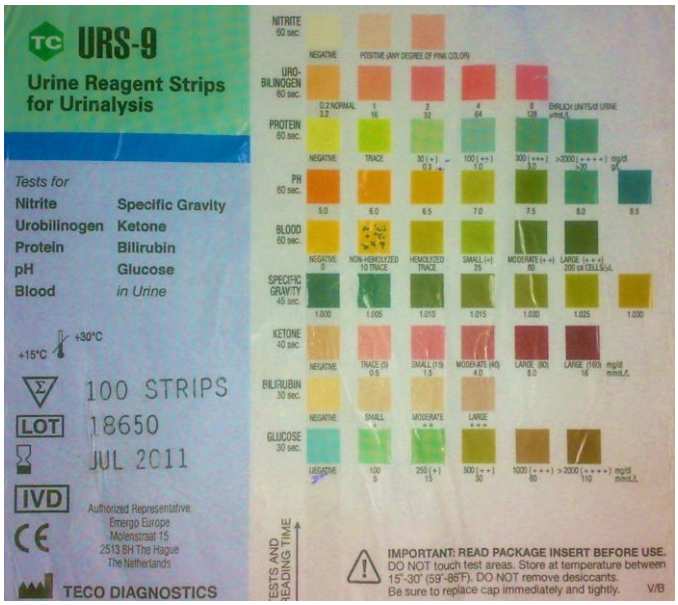
Annexures

Annexure III

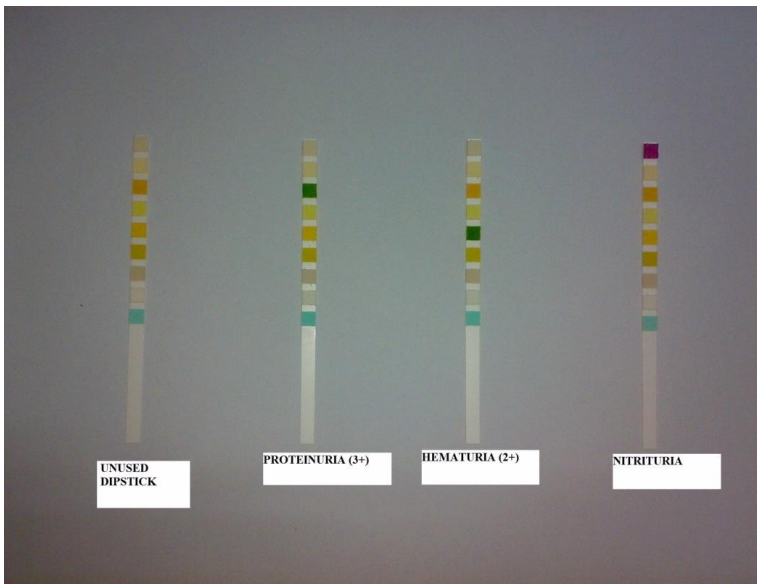
ANNEXURE III – PHOTOGRAPHS

Photograph 1. Dipstick containers

Photograph 2. Sterile Urine container



Photograph 3. Comparison color chart provided with the dipsticks



Photograph 4. Dipsticks showing urinary abnormalities compared to unused dipstick

Annexures

Annexure IV

ANNEXURE IV – KEY TO MASTER CHART

+, ++,+++	-	Grades of proteinuria and hematuria
DBP	-	Diastolic blood pressure
Dt	-	Dental student
F	-	Female
M	-	Male
Md	-	Medical Student
Pt	-	Positive
SBP	-	Systolic blood pressure
Sl. No.	-	Serial number

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
1	Md	M	21	128	76	86	Normal	Yellow	Clear	-	-	-	-
2	Md	M	21	126	78	62	Normal	Yellow	Clear	-	-	-	-
3	Md	M	21	124	78	76	Normal	Yellow	Clear	-	-	-	-
4	Md	M	21	110	74	78	Normal	Yellow	Clear	-	-	-	-
5	Md	M	21	130	70	80	Normal	Yellow	Clear	-	-	-	-
6	Md	M	21	112	80	84	Normal	Yellow	Clear	-	-	-	-
7	Md	M	21	116	84	72	Normal	Yellow	Clear	-	-	-	-
8	Md	M	21	120	80	64	Normal	Yellow	Clear	-	-	-	-
9	Md	M	21	118	70	68	Normal	Yellow	Clear	-	-	-	-
10	Md	M	21	110	76	74	Normal	Yellow	Clear	-	-	-	-
11	Md	M	21	120	84	66	Normal	Yellow	Clear	-	-	-	-
12	Md	M	21	120	86	70	Normal	Yellow	Clear	-	-	-	-
13	Md	M	21	118	70	66	Normal	Yellow	Clear	-	-	-	-
14	Md	M	21	120	80	70	Normal	Yellow	Clear	-	-	-	-
15	Md	M	21	116	84	74	Normal	Yellow	Clear	-	-	-	-
16	Md	M	21	112	80	68	Normal	Yellow	Clear	-	-	-	-
17	Md	M	21	130	70	64	Normal	Yellow	Clear	-	-	-	-
18	Md	M	21	110	74	72	Normal	Yellow	Clear	-	-	-	-
19	Md	M	21	124	78	84	Normal	Yellow	Clear	++	-	-	-
20	Md	M	21	126	78	80	Normal	Yellow	Clear	-	-	-	-
21	Md	M	21	128	76	78	Normal	Yellow	Clear	-	-	-	-
22	Md	M	21	126	78	76	Normal	Yellow	Clear	-	-	-	-
23	Md	M	21	124	78	86	Normal	Yellow	Clear	-	-	-	-
24	Md	M	21	110	74	62	Normal	Yellow	Clear	-	-	-	-
25	Md	M	21	130	70	86	Normal	Yellow	Clear	-	-	-	-
26	Md	M	21	112	80	62	Normal	Yellow	Clear	-	-	-	-
27	Md	M	21	116	84	76	Normal	Yellow	Clear	-	-	-	-
28	Md	M	21	120	80	78	Normal	Yellow	Clear	-	-	-	-
29	Md	M	21	118	70	80	Normal	Yellow	Clear	-	-	-	-
30	Md	M	21	110	76	84	Normal	Yellow	Clear	-	-	-	-
31	Md	M	21	120	84	72	Normal	Yellow	Clear	-	-	-	-
32	Md	M	21	120	86	64	Normal	Yellow	Clear	-	-	-	-
33	Md	M	21	118	70	68	Normal	Yellow	Clear	-	-	-	-
34	Md	M	21	120	80	74	Normal	Yellow	Clear	-	-	-	-
35	Md	M	21	116	84	66	Normal	Yellow	Clear	-	-	-	-
36	Md	M	21	112	80	70	Normal	Yellow	Clear	+	-	-	-
37	Md	M	21	130	70	66	Normal	Yellow	Clear	-	-	-	-
38	Md	M	21	110	74	70	Normal	Yellow	Clear	-	-	-	-
39	Md	M	21	124	78	74	Normal	Yellow	Clear	-	-	-	-
40	Md	M	21	126	78	68	Normal	Yellow	Clear	-	-	-	-
41	Md	M	21	128	76	64	Normal	Yellow	Clear	-	-	-	-
42	Md	M	21	126	78	72	Normal	Yellow	Clear	-	-	-	-
43	Md	M	21	124	78	84	Normal	Yellow	Clear	-	-	-	-
44	Md	M	21	110	74	80	Normal	Yellow	Clear	-	-	-	-
45	Md	M	21	130	70	78	Normal	Yellow	Clear	-	-	-	-
46	Md	M	21	112	80	76	Normal	Yellow	Clear	-	-	-	-
47	Md	M	21	116	84	86	Normal	Yellow	Clear	-	-	-	-
48	Md	M	21	120	80	62	Normal	Yellow	Clear	-	-	-	-
49	Md	M	21	118	70	86	Normal	Yellow	Clear	-	-	-	-
50	Md	M	21	110	76	62	Normal	Yellow	Clear	-	-	-	-
51	Md	M	21	120	84	76	Normal	Yellow	Clear	-	-	-	-
52	Md	M	21	120	86	78	Normal	Yellow	Clear	-	-	-	-
53	Md	M	21	118	70	80	Normal	Yellow	Clear	-	-	-	-
54	Md	M	21	120	80	84	Normal	Yellow	Clear	-	-	-	-
55	Md	M	21	116	84	72	Normal	Yellow	Clear	-	-	-	-
56	Md	M	21	112	80	64	Normal	Yellow	Clear	-	-	-	-
57	Md	M	21	130	70	68	Normal	Yellow	Clear	-	-	-	-
58	Md	M	21	110	74	74	Normal	Yellow	Clear	-	-	-	-
59	Md	M	22	124	78	66	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
60	Md	M	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
61	Md	M	22	128	76	66	Normal	Yellow	Clear	-	-	-	-
62	Md	M	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
63	Md	M	22	124	78	74	Normal	Yellow	Clear	-	-	-	-
64	Md	M	22	110	74	68	Normal	Yellow	Clear	-	-	-	-
65	Md	M	22	130	70	64	Normal	Yellow	Clear	-	-	-	-
66	Md	M	22	112	80	72	Normal	Yellow	Clear	-	-	-	-
67	Md	M	22	116	84	84	Normal	Yellow	Clear	-	-	-	-
68	Md	M	22	120	80	80	Normal	Yellow	Clear	-	-	-	-
69	Md	M	22	118	70	78	Normal	Yellow	Clear	-	-	-	-
70	Md	M	22	110	76	76	Normal	Yellow	Clear	-	-	-	-
71	Md	M	22	120	84	86	Normal	Yellow	Clear	-	-	-	-
72	Md	M	22	120	86	62	Normal	Yellow	Clear	-	-	-	-
73	Md	M	22	118	70	86	Normal	Yellow	Clear	-	-	-	-
74	Md	M	22	120	80	62	Normal	Yellow	Clear	-	-	-	-
75	Md	M	22	116	84	76	Normal	Yellow	Clear	-	-	-	-
76	Md	M	22	112	80	78	Normal	Yellow	Clear	-	-	-	-
77	Md	M	22	130	70	80	Normal	Yellow	Clear	-	-	-	-
78	Md	M	22	110	74	84	Normal	Yellow	Clear	-	+	-	-
79	Md	M	22	124	78	72	Normal	Yellow	Clear	-	-	-	-
80	Md	M	22	126	78	64	Normal	Yellow	Clear	-	-	-	-
81	Md	M	22	128	76	68	Normal	Yellow	Clear	-	-	-	-
82	Md	M	22	126	78	74	Normal	Yellow	Clear	-	-	-	-
83	Md	M	22	124	78	66	Normal	Yellow	Clear	-	-	-	-
84	Md	M	22	110	74	70	Normal	Yellow	Clear	-	-	-	-
85	Md	M	22	130	70	66	Normal	Yellow	Clear	-	-	-	-
86	Md	M	22	112	80	70	Normal	Yellow	Clear	-	-	-	-
87	Md	M	22	116	84	74	Normal	Yellow	Clear	-	-	-	-
88	Md	M	22	120	80	68	Normal	Yellow	Clear	-	-	-	-
89	Md	M	22	118	70	64	Normal	Yellow	Clear	-	-	-	-
90	Md	M	22	110	76	72	Normal	Yellow	Clear	-	-	-	-
91	Md	M	22	120	84	84	Normal	Yellow	Clear	-	-	-	-
92	Md	M	22	120	86	80	Normal	Yellow	Clear	-	-	-	-
93	Md	M	22	118	70	78	Normal	Yellow	Clear	-	-	-	-
94	Md	M	22	120	80	76	Normal	Yellow	Clear	-	-	-	-
95	Md	M	22	116	84	86	Normal	Yellow	Clear	-	-	-	-
96	Md	M	22	112	80	62	Normal	Yellow	Clear	-	+	-	-
97	Md	M	22	130	70	86	Normal	Yellow	Clear	-	-	-	-
98	Md	M	22	110	74	62	Normal	Yellow	Clear	-	-	-	-
99	Md	M	22	124	78	76	Normal	Yellow	Clear	-	-	-	-
100	Md	M	22	126	78	78	Normal	Yellow	Clear	-	-	-	-
101	Md	M	22	128	76	80	Normal	Yellow	Clear	-	-	-	-
102	Md	M	22	126	78	84	Normal	Yellow	Clear	-	-	-	-
103	Md	M	22	124	78	72	Normal	Yellow	Clear	-	-	-	-
104	Md	M	22	110	74	64	Normal	Yellow	Clear	-	-	-	-
105	Md	M	22	130	70	68	Normal	Yellow	Clear	-	-	-	-
106	Md	M	22	112	80	74	Normal	Yellow	Clear	-	-	-	-
107	Md	M	22	116	84	66	Normal	Yellow	Clear	-	-	-	-
108	Md	M	22	120	80	70	Normal	Yellow	Clear	-	-	-	-
109	Md	M	22	118	70	66	Normal	Yellow	Clear	-	-	-	-
110	Md	M	22	110	76	70	Normal	Yellow	Clear	-	-	-	-
111	Md	M	22	120	84	74	Normal	Yellow	Clear	-	-	-	-
112	Md	M	22	120	86	68	Normal	Yellow	Clear	-	-	-	-
113	Md	M	22	118	70	64	Normal	Yellow	Clear	-	-	-	-
114	Md	M	22	120	80	72	Normal	Yellow	Clear	-	-	-	-
115	Md	M	22	116	84	84	Normal	Yellow	Clear	-	-	-	-
116	Md	M	22	112	80	80	Normal	Yellow	Clear	-	-	-	-
117	Md	M	22	130	70	78	Normal	Yellow	Clear	-	-	-	-
118	Md	M	19	110	74	76	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
119	Md	M	19	124	78	86	Normal	Yellow	Clear	-	-	-	-
120	Md	M	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
121	Md	M	19	128	76	86	Normal	Yellow	Clear	-	-	-	-
122	Md	M	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
123	Md	M	19	124	78	76	Normal	Yellow	Clear	-	-	-	-
124	Md	M	19	110	74	78	Normal	Yellow	Clear	-	-	-	-
125	Md	M	19	130	70	80	Normal	Yellow	Clear	-	-	-	-
126	Md	M	19	112	80	84	Normal	Yellow	Clear	-	-	-	-
127	Md	M	19	116	84	72	Normal	Yellow	Clear	-	-	-	-
128	Md	M	19	120	80	64	Normal	Yellow	Clear	+	-	-	-
129	Md	M	19	118	70	68	Normal	Yellow	Clear	-	-	-	-
130	Md	M	19	110	76	74	Normal	Yellow	Clear	-	-	-	-
131	Md	M	19	120	84	66	Normal	Yellow	Clear	-	-	-	-
132	Md	M	19	120	86	70	Normal	Yellow	Clear	-	-	-	-
133	Md	M	19	118	70	66	Normal	Yellow	Clear	-	-	-	-
134	Md	M	19	120	80	70	Normal	Yellow	Clear	-	-	-	-
135	Md	M	19	116	84	74	Normal	Yellow	Clear	-	-	-	-
136	Md	M	19	112	80	68	Normal	Yellow	Clear	-	-	-	-
137	Md	M	19	130	70	64	Normal	Yellow	Clear	-	-	-	-
138	Md	M	19	110	74	72	Normal	Yellow	Clear	-	-	-	-
139	Md	M	19	124	78	84	Normal	Yellow	Clear	-	-	-	-
140	Md	M	19	126	78	80	Normal	Yellow	Clear	-	-	-	-
141	Md	M	19	128	76	78	Normal	Yellow	Clear	+	-	-	-
142	Md	M	19	126	78	76	Normal	Yellow	Clear	-	-	-	-
143	Md	M	19	124	78	86	Normal	Yellow	Clear	-	-	-	-
144	Md	M	19	110	74	62	Normal	Yellow	Clear	-	-	-	-
145	Md	M	19	130	70	86	Normal	Yellow	Clear	-	-	-	-
146	Md	M	19	112	80	62	Normal	Yellow	Clear	-	-	-	-
147	Md	M	19	116	84	76	Normal	Yellow	Clear	-	-	-	-
148	Md	M	19	120	80	78	Normal	Yellow	Clear	-	-	-	-
149	Md	M	19	118	70	80	Normal	Yellow	Clear	-	-	-	-
150	Md	M	19	110	76	84	Normal	Yellow	Clear	++	-	-	-
151	Md	M	19	120	84	72	Normal	Yellow	Clear	-	-	-	-
152	Md	M	19	120	86	64	Normal	Yellow	Clear	-	-	-	-
153	Md	M	19	118	70	68	Normal	Yellow	Clear	-	-	-	-
154	Md	M	19	120	80	74	Normal	Yellow	Clear	-	-	-	-
155	Md	M	19	116	84	66	Normal	Yellow	Clear	-	-	-	-
156	Md	M	19	112	80	70	Normal	Yellow	Clear	-	-	-	-
157	Md	M	19	130	70	66	Normal	Yellow	Clear	-	-	-	-
158	Md	M	19	110	74	70	Normal	Yellow	Clear	-	-	-	-
159	Md	M	19	124	78	74	Normal	Yellow	Clear	-	-	-	-
160	Md	M	19	126	78	68	Normal	Yellow	Clear	-	-	-	-
161	Md	M	19	128	76	64	Normal	Yellow	Clear	-	-	-	-
162	Md	M	19	126	78	72	Normal	Yellow	Clear	-	-	-	-
163	Md	M	19	124	78	84	Normal	Yellow	Clear	-	-	-	-
164	Md	M	19	110	74	80	Normal	Yellow	Clear	-	+	-	-
165	Md	M	19	130	70	78	Normal	Yellow	Clear	-	-	-	-
166	Md	M	19	112	80	76	Normal	Yellow	Clear	-	-	-	-
167	Md	M	19	116	84	86	Normal	Yellow	Clear	-	-	-	-
168	Md	M	19	120	80	62	Normal	Yellow	Clear	-	-	-	-
169	Md	M	19	118	70	86	Normal	Yellow	Clear	-	-	-	-
170	Md	M	19	110	76	62	Normal	Yellow	Clear	-	-	-	-
171	Md	M	19	120	84	76	Normal	Yellow	Clear	-	-	-	-
172	Md	M	19	120	86	78	Normal	Yellow	Clear	-	-	-	-
173	Md	M	22	118	70	80	Normal	Yellow	Clear	-	-	-	-
174	Md	M	22	120	80	84	Normal	Yellow	Clear	-	-	-	-
175	Md	M	22	116	84	72	Normal	Yellow	Clear	-	-	-	-
176	Md	M	22	112	80	64	Normal	Yellow	Clear	-	-	-	-
177	Md	M	22	130	70	68	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
178	Md	M	22	110	74	74	Normal	Yellow	Clear	-	-	-	-
179	Md	M	22	124	78	66	Normal	Yellow	Clear	-	-	-	-
180	Md	M	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
181	Md	M	22	128	76	66	Normal	Yellow	Clear	-	-	-	-
182	Md	M	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
183	Md	M	22	124	78	74	Normal	Yellow	Clear	-	-	-	-
184	Md	M	22	110	74	68	Normal	Yellow	Clear	-	-	-	-
185	Md	M	22	130	70	64	Normal	Yellow	Clear	-	-	-	-
186	Md	M	22	112	80	72	Normal	Yellow	Clear	+	-	-	-
187	Md	M	22	116	84	84	Normal	Yellow	Clear	-	-	-	-
188	Md	M	21	120	80	80	Normal	Yellow	Clear	-	-	-	-
189	Md	M	21	118	70	78	Normal	Yellow	Clear	-	-	-	-
190	Md	M	21	110	76	76	Normal	Yellow	Clear	-	-	-	-
191	Md	M	21	120	84	86	Normal	Yellow	Clear	-	-	-	-
192	Md	M	21	120	86	62	Normal	Yellow	Clear	-	-	-	-
193	Md	M	21	118	70	86	Normal	Yellow	Clear	-	-	-	-
194	Md	M	21	120	80	62	Normal	Yellow	Clear	-	-	-	-
195	Md	M	20	116	84	76	Normal	Yellow	Clear	-	-	-	-
196	Md	M	20	112	80	78	Normal	Yellow	Clear	-	-	-	-
197	Md	M	20	130	70	80	Normal	Yellow	Clear	-	-	-	-
198	Md	M	20	110	74	84	Normal	Yellow	Clear	-	-	-	-
199	Md	M	20	124	78	72	Normal	Yellow	Clear	-	-	-	-
200	Md	M	20	126	78	64	Normal	Yellow	Clear	-	-	-	-
201	Md	M	20	128	76	68	Normal	Yellow	Clear	-	-	-	-
202	Md	M	20	126	78	74	Normal	Yellow	Clear	-	-	-	-
203	Md	M	20	124	78	66	Normal	Yellow	Clear	-	-	-	-
204	Md	M	20	110	74	70	Normal	Yellow	Clear	-	-	-	-
205	Md	M	20	130	70	66	Normal	Yellow	Clear	-	-	-	-
206	Md	M	20	112	80	70	Normal	Yellow	Clear	-	-	-	-
207	Md	M	20	116	84	74	Normal	Yellow	Clear	-	-	-	-
208	Md	M	20	120	80	68	Normal	Yellow	Clear	-	-	-	-
209	Md	M	20	118	70	64	Normal	Yellow	Clear	-	-	-	-
210	Md	M	20	110	76	72	Normal	Yellow	Clear	+	-	-	-
211	Md	M	20	120	84	84	Normal	Yellow	Clear	-	-	-	-
212	Md	M	20	120	86	80	Normal	Yellow	Clear	-	-	-	-
213	Md	M	20	118	70	78	Normal	Yellow	Clear	-	-	-	-
214	Md	M	20	120	80	76	Normal	Yellow	Clear	-	-	-	-
215	Md	M	20	116	84	86	Normal	Yellow	Clear	-	-	-	-
216	Md	M	20	112	80	62	Normal	Yellow	Clear	-	-	-	-
217	Md	M	20	130	70	86	Normal	Yellow	Clear	-	-	-	-
218	Md	M	20	110	74	62	Normal	Yellow	Clear	-	-	-	-
219	Md	M	20	124	78	76	Normal	Yellow	Clear	-	-	-	-
220	Md	M	20	126	78	78	Normal	Yellow	Clear	-	-	-	-
221	Md	M	20	128	76	80	Normal	Yellow	Clear	-	-	-	-
222	Md	M	20	126	78	84	Normal	Yellow	Clear	-	-	-	-
223	Md	M	20	124	78	72	Normal	Yellow	Clear	-	-	-	-
224	Md	M	20	110	74	64	Normal	Yellow	Clear	-	-	-	-
225	Md	M	20	130	70	68	Normal	Yellow	Clear	-	-	-	-
226	Md	M	20	112	80	74	Normal	Yellow	Clear	-	-	-	-
227	Md	M	20	116	84	66	Normal	Yellow	Clear	-	-	-	-
228	Md	M	20	120	80	70	Normal	Yellow	Clear	-	-	-	-
229	Md	M	20	118	70	66	Normal	Yellow	Clear	-	-	-	-
230	Md	M	20	110	76	70	Normal	Yellow	Clear	-	-	-	-
231	Md	M	20	120	84	74	Normal	Yellow	Clear	-	-	-	-
232	Md	M	18	120	86	68	Normal	Yellow	Clear	-	-	-	-
233	Md	M	18	118	70	64	Normal	Yellow	Clear	+	-	-	-
234	Md	M	18	120	80	72	Normal	Yellow	Clear	-	-	-	-
235	Md	M	18	116	84	84	Normal	Yellow	Clear	-	-	-	-
236	Md	M	18	112	80	80	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
237	Md	M	18	130	70	78	Normal	Yellow	Clear	-	-	-	-
238	Md	M	18	110	74	76	Normal	Yellow	Clear	-	-	-	-
239	Md	M	18	124	78	86	Normal	Yellow	Clear	-	-	-	-
240	Md	M	18	126	78	62	Normal	Yellow	Clear	+	-	-	-
241	Md	M	18	128	76	86	Normal	Yellow	Clear	-	-	-	-
242	Md	M	18	126	78	62	Normal	Yellow	Clear	-	-	-	-
243	Md	M	18	124	78	76	Normal	Yellow	Clear	-	-	-	-
244	Md	M	18	110	74	78	Normal	Yellow	Clear	-	-	-	-
245	Md	M	18	130	70	80	Normal	Yellow	Clear	-	-	-	-
246	Md	M	18	112	80	84	Normal	Yellow	Clear	-	-	-	-
247	Md	M	18	116	84	72	Normal	Yellow	Clear	-	-	-	-
248	Md	M	18	120	80	64	Normal	Yellow	Clear	-	-	-	-
249	Md	M	18	118	70	68	Normal	Yellow	Clear	-	-	-	-
250	Md	M	18	110	76	74	Normal	Yellow	Clear	-	-	-	-
251	Md	M	18	120	84	66	Normal	Yellow	Clear	-	-	-	-
252	Md	M	18	120	86	70	Normal	Yellow	Clear	-	-	-	-
253	Md	M	18	118	70	66	Normal	Yellow	Clear	-	-	-	-
254	Md	M	18	120	80	70	Normal	Yellow	Clear	-	-	-	-
255	Md	M	18	116	84	74	Normal	Yellow	Clear	-	-	-	-
256	Md	F	21	112	80	68	Normal	Yellow	Clear	-	-	-	-
257	Md	F	21	130	70	64	Normal	Yellow	Clear	-	-	-	-
258	Md	F	21	110	74	72	Normal	Yellow	Clear	-	-	-	-
259	Md	F	21	124	78	84	Normal	Yellow	Clear	-	-	-	-
260	Md	F	21	126	78	80	Normal	Yellow	Clear	-	-	-	-
261	Md	F	21	128	76	78	Normal	Yellow	Clear	-	-	-	-
262	Md	F	21	126	78	76	Normal	Yellow	Clear	-	-	-	-
263	Md	F	21	124	78	86	Normal	Yellow	Clear	-	-	-	-
264	Md	F	21	110	74	62	Normal	Yellow	Clear	-	-	-	-
265	Md	F	21	130	70	86	Normal	Yellow	Clear	-	-	-	-
266	Md	F	21	112	80	62	Normal	Yellow	Clear	-	-	-	-
267	Md	F	21	116	84	76	Normal	Yellow	Clear	-	-	-	-
268	Md	F	21	120	80	78	Normal	Yellow	Clear	-	-	-	-
269	Md	F	21	118	70	80	Normal	Yellow	Clear	-	-	-	-
270	Md	F	21	110	76	84	Normal	Yellow	Clear	-	-	-	-
271	Md	F	21	120	84	72	Normal	Yellow	Clear	-	-	-	-
272	Md	F	21	120	86	64	Normal	Yellow	Clear	-	-	-	-
273	Md	F	21	118	70	68	Normal	Yellow	Clear	-	-	-	-
274	Md	F	21	120	80	74	Normal	Yellow	Clear	-	-	-	-
275	Md	F	21	116	84	66	Normal	Yellow	Clear	-	-	-	-
276	Md	F	21	112	80	70	Normal	Yellow	Clear	-	-	-	-
277	Md	F	21	130	70	66	Normal	Yellow	Clear	-	-	-	-
278	Md	F	21	110	74	70	Normal	Yellow	Clear	-	-	-	-
279	Md	F	21	124	78	74	Normal	Yellow	Clear	-	-	-	-
280	Md	F	21	126	78	68	Normal	Yellow	Clear	-	-	-	-
281	Md	F	21	128	76	64	Normal	Yellow	Clear	-	-	-	-
282	Md	F	21	126	78	72	Normal	Yellow	Clear	-	-	-	-
283	Md	F	21	124	78	84	Normal	Yellow	Clear	-	-	-	-
284	Md	F	21	110	74	80	Normal	Yellow	Clear	-	-	-	-
285	Md	F	21	130	70	78	Normal	Yellow	Clear	-	-	-	-
286	Md	F	22	112	80	76	Normal	Yellow	Clear	-	-	-	-
287	Md	F	22	116	84	86	Normal	Yellow	Clear	-	-	-	-
288	Md	F	22	120	80	62	Normal	Yellow	Clear	-	-	-	-
289	Md	F	22	118	70	86	Normal	Yellow	Clear	+	-	-	-
290	Md	F	22	110	76	62	Normal	Yellow	Clear	-	-	-	-
291	Md	F	22	120	84	76	Normal	Yellow	Clear	-	-	-	-
292	Md	F	22	120	86	78	Normal	Yellow	Clear	-	-	-	-
293	Md	F	22	118	70	80	Normal	Yellow	Clear	-	+++	-	-
294	Md	F	22	120	80	84	Normal	Yellow	Clear	-	-	-	-
295	Md	F	22	116	84	72	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
296	Md	F	22	112	80	64	Normal	Yellow	Clear	+	-	-	-
297	Md	F	22	130	70	68	Normal	Yellow	Clear	-	-	-	-
298	Md	F	22	110	74	74	Normal	Yellow	Clear	-	+	-	-
299	Md	F	22	124	78	66	Normal	Yellow	Clear	-	-	-	-
300	Md	F	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
301	Md	F	22	128	76	66	Normal	Yellow	Clear	+	-	-	-
302	Md	F	22	126	78	70	Normal	Yellow	Clear	-	-	-	-
303	Md	F	22	124	78	74	Normal	Yellow	Clear	-	-	-	Pt
304	Md	F	22	110	74	68	Normal	Yellow	Clear	-	-	-	-
305	Md	F	22	130	70	64	Normal	Yellow	Clear	-	-	-	-
306	Md	F	22	112	80	72	Normal	Yellow	Clear	-	-	-	-
307	Md	F	22	116	84	84	Normal	Yellow	Clear	+	-	-	-
308	Md	F	22	120	80	80	Normal	Yellow	Clear	-	-	-	-
309	Md	F	22	118	70	78	Normal	Yellow	Clear	-	-	-	-
310	Md	F	22	110	76	76	Normal	Yellow	Clear	-	-	-	-
311	Md	F	22	120	84	86	Normal	Yellow	Clear	-	-	-	-
312	Md	F	22	120	86	62	Normal	Yellow	Clear	-	-	-	-
313	Md	F	22	118	70	86	Normal	Yellow	Clear	-	-	-	-
314	Md	F	22	120	80	62	Normal	Yellow	Clear	-	-	-	-
315	Md	F	22	116	84	76	Normal	Yellow	Clear	-	-	-	-
316	Md	F	22	112	80	78	Normal	Yellow	Clear	++	-	-	-
317	Md	F	22	130	70	80	Normal	Yellow	Clear	-	-	-	-
318	Md	F	22	110	74	84	Normal	Yellow	Clear	-	-	-	-
319	Md	F	22	124	78	72	Normal	Yellow	Clear	-	-	-	-
320	Md	F	22	126	78	64	Normal	Yellow	Clear	-	-	-	-
321	Md	F	22	128	76	68	Normal	Yellow	Clear	-	-	-	-
322	Md	F	22	126	78	74	Normal	Yellow	Clear	-	-	-	-
323	Md	F	22	124	78	66	Normal	Yellow	Clear	-	-	-	-
324	Md	F	22	110	74	70	Normal	Yellow	Clear	-	-	-	-
325	Md	F	22	130	70	66	Normal	Yellow	Clear	-	-	-	-
326	Md	F	22	112	80	70	Normal	Yellow	Clear	-	-	-	-
327	Md	F	22	116	84	74	Normal	Yellow	Clear	-	-	-	-
328	Md	F	22	120	80	68	Normal	Yellow	Clear	-	-	-	-
329	Md	F	22	118	70	64	Normal	Yellow	Clear	-	-	-	-
330	Md	F	22	110	76	72	Normal	Yellow	Clear	-	-	-	-
331	Md	F	22	120	84	84	Normal	Yellow	Clear	-	-	-	-
332	Md	F	22	120	86	80	Normal	Yellow	Clear	++	-	-	-
333	Md	F	22	118	70	78	Normal	Yellow	Clear	-	-	-	-
334	Md	F	22	120	80	76	Normal	Yellow	Clear	-	-	-	-
335	Md	F	22	116	84	86	Normal	Yellow	Clear	-	-	-	-
336	Md	F	22	112	80	62	Normal	Yellow	Clear	-	-	-	-
337	Md	F	22	130	70	86	Normal	Yellow	Clear	-	-	-	-
338	Md	F	22	110	74	62	Normal	Yellow	Clear	-	-	-	-
339	Md	F	22	124	78	76	Normal	Yellow	Clear	-	-	-	-
340	Md	F	22	126	78	78	Normal	Yellow	Clear	-	-	-	-
341	Md	F	22	128	76	80	Normal	Yellow	Clear	-	-	-	-
342	Md	F	22	126	78	84	Normal	Yellow	Clear	-	-	-	-
343	Md	F	22	124	78	72	Normal	Yellow	Clear	+	-	-	-
344	Md	F	22	110	74	64	Normal	Yellow	Clear	-	-	-	-
345	Md	F	22	130	70	68	Normal	Yellow	Clear	+	-	-	-
346	Md	F	19	112	80	74	Normal	Yellow	Clear	-	-	-	-
347	Md	F	19	116	84	66	Normal	Yellow	Clear	-	-	-	-
348	Md	F	19	120	80	70	Normal	Yellow	Clear	-	-	-	-
349	Md	F	19	118	70	66	Normal	Yellow	Clear	-	-	-	-
350	Md	F	19	110	76	70	Normal	Yellow	Clear	-	-	-	-
351	Md	F	19	120	84	74	Normal	Yellow	Clear	-	-	-	-
352	Md	F	19	120	86	68	Normal	Yellow	Clear	-	-	-	-
353	Md	F	19	118	70	64	Normal	Yellow	Clear	-	-	-	-
354	Md	F	19	120	80	72	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
355	Md	F	19	116	84	84	Normal	Yellow	Clear	-	-	-	-
356	Md	F	19	112	80	80	Normal	Yellow	Clear	-	-	-	-
357	Md	F	19	130	70	78	Normal	Yellow	Clear	-	-	-	-
358	Md	F	19	110	74	76	Normal	Yellow	Clear	-	-	-	-
359	Md	F	19	124	78	86	Normal	Yellow	Clear	-	-	-	-
360	Md	F	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
361	Md	F	19	128	76	86	Normal	Yellow	Clear	-	-	-	-
362	Md	F	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
363	Md	F	19	124	78	76	Normal	Yellow	Clear	-	-	-	-
364	Md	F	19	110	74	78	Normal	Yellow	Clear	-	-	-	-
365	Md	F	19	130	70	80	Normal	Yellow	Clear	-	-	-	-
366	Md	F	19	112	80	84	Normal	Yellow	Clear	-	-	-	-
367	Md	F	19	116	84	72	Normal	Yellow	Clear	-	-	-	-
368	Md	F	19	120	80	64	Normal	Yellow	Clear	-	-	-	-
369	Md	F	19	118	70	68	Normal	Yellow	Clear	-	-	-	-
370	Md	F	19	110	76	74	Normal	Yellow	Clear	-	-	-	-
371	Md	F	19	120	84	66	Normal	Yellow	Clear	-	-	-	-
372	Md	F	19	120	86	70	Normal	Yellow	Clear	-	-	-	-
373	Md	F	19	118	70	66	Normal	Yellow	Clear	-	-	-	-
374	Md	F	19	120	80	70	Normal	Yellow	Clear	-	-	-	-
375	Md	F	19	116	84	74	Normal	Yellow	Clear	-	-	-	-
376	Md	F	19	112	80	68	Normal	Yellow	Clear	-	-	-	-
377	Md	F	19	130	70	64	Normal	Yellow	Clear	-	-	-	-
378	Md	F	19	110	74	72	Normal	Yellow	Clear	-	-	-	-
379	Md	F	19	124	78	84	Normal	Yellow	Clear	-	-	-	-
380	Md	F	19	126	78	80	Normal	Yellow	Clear	-	-	-	-
381	Md	F	19	128	76	78	Normal	Yellow	Clear	-	-	-	-
382	Md	F	19	126	78	76	Normal	Yellow	Clear	-	-	-	-
383	Md	F	19	124	78	86	Normal	Yellow	Clear	-	-	-	-
384	Md	F	19	110	74	62	Normal	Yellow	Clear	-	-	-	-
385	Md	F	19	130	70	86	Normal	Yellow	Clear	-	-	-	-
386	Md	F	19	112	80	62	Normal	Yellow	Clear	-	-	-	-
387	Md	F	19	116	84	76	Normal	Yellow	Clear	-	-	-	-
388	Md	F	19	120	80	78	Normal	Yellow	Clear	-	-	-	-
389	Md	F	19	118	70	80	Normal	Yellow	Clear	-	-	-	-
390	Md	F	19	110	76	84	Normal	Yellow	Clear	-	-	-	-
391	Md	F	19	120	84	72	Normal	Yellow	Clear	-	-	-	-
392	Md	F	19	120	86	64	Normal	Yellow	Clear	-	-	-	-
393	Md	F	19	118	70	68	Normal	Yellow	Clear	-	-	-	-
394	Md	F	19	120	80	74	Normal	Yellow	Clear	-	-	-	-
395	Md	F	19	116	84	66	Normal	Yellow	Clear	-	-	-	-
396	Md	F	19	112	80	70	Normal	Yellow	Clear	-	-	-	-
397	Md	F	19	130	70	66	Normal	Yellow	Clear	-	+	-	-
398	Md	F	20	110	74	70	Normal	Yellow	Clear	-	-	-	-
399	Md	F	20	124	78	74	Normal	Yellow	Clear	-	-	-	-
400	Md	F	20	126	78	68	Normal	Yellow	Clear	-	-	-	-
401	Md	F	20	128	76	64	Normal	Yellow	Clear	-	-	-	-
402	Md	F	20	126	78	72	Normal	Yellow	Clear	-	-	-	-
403	Md	F	20	124	78	84	Normal	Yellow	Clear	-	-	-	-
404	Md	F	20	110	74	80	Normal	Yellow	Clear	-	-	-	-
405	Md	F	20	130	70	78	Normal	Yellow	Clear	-	-	-	-
406	Md	F	20	112	80	76	Normal	Yellow	Clear	-	-	-	-
407	Md	F	20	116	84	86	Normal	Yellow	Clear	-	-	-	-
408	Md	F	20	120	80	62	Normal	Yellow	Clear	-	-	-	-
409	Md	F	20	118	70	86	Normal	Yellow	Clear	-	-	-	-
410	Md	F	20	110	76	62	Normal	Yellow	Clear	-	-	-	-
411	Md	F	20	120	84	76	Normal	Yellow	Clear	-	-	-	-
412	Md	F	20	120	86	78	Normal	Yellow	Clear	-	-	-	-
413	Md	F	20	118	70	80	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
414	Md	F	20	120	80	84	Normal	Yellow	Clear	-	-	-	-
415	Md	F	20	116	84	72	Normal	Yellow	Clear	-	-	-	-
416	Md	F	20	112	80	64	Normal	Yellow	Clear	-	-	-	-
417	Md	F	20	130	70	68	Normal	Yellow	Clear	-	-	-	-
418	Md	F	20	110	74	74	Normal	Yellow	Clear	-	-	-	-
419	Md	F	20	124	78	66	Normal	Yellow	Clear	-	-	-	-
420	Md	F	20	126	78	70	Normal	Yellow	Clear	-	-	-	-
421	Md	F	20	128	76	66	Normal	Yellow	Clear	-	-	-	-
422	Md	F	20	126	78	70	Normal	Yellow	Clear	-	-	-	-
423	Md	F	20	124	78	74	Normal	Yellow	Clear	-	-	-	-
424	Md	F	20	110	74	68	Normal	Yellow	Clear	-	-	-	Pt
425	Md	F	20	130	70	64	Normal	Yellow	Clear	-	-	-	-
426	Md	F	20	112	80	72	Normal	Yellow	Clear	-	-	-	-
427	Md	F	20	116	84	84	Normal	Yellow	Clear	-	-	-	-
428	Md	F	20	120	80	80	Normal	Yellow	Clear	-	-	-	-
429	Md	F	20	118	70	78	Normal	Yellow	Clear	-	-	-	-
430	Md	F	20	110	76	76	Normal	Yellow	Clear	-	-	-	-
431	Md	F	20	120	84	86	Normal	Yellow	Clear	-	-	-	-
432	Md	F	20	120	86	62	Normal	Yellow	Clear	-	-	-	-
433	Md	F	20	118	70	86	Normal	Yellow	Clear	-	-	-	-
434	Md	F	20	120	80	62	Normal	Yellow	Clear	-	-	-	-
435	Md	F	20	116	84	76	Normal	Yellow	Clear	-	-	-	-
436	Md	F	20	112	80	78	Normal	Yellow	Clear	-	-	-	-
437	Md	F	20	130	70	80	Normal	Yellow	Clear	-	-	-	-
438	Md	F	20	110	74	84	Normal	Yellow	Clear	-	-	-	-
439	Md	F	20	124	78	72	Normal	Yellow	Clear	-	-	-	-
440	Md	F	20	126	78	64	Normal	Yellow	Clear	-	-	-	-
441	Md	F	20	128	76	68	Normal	Yellow	Clear	-	-	-	-
442	Md	F	20	126	78	74	Normal	Yellow	Clear	-	-	-	-
443	Md	F	20	124	78	66	Normal	Yellow	Clear	-	-	-	-
444	Md	F	20	110	74	70	Normal	Yellow	Clear	-	-	-	-
445	Md	F	20	130	70	66	Normal	Yellow	Clear	-	-	-	-
446	Md	F	20	112	80	70	Normal	Yellow	Clear	-	-	-	-
447	Md	F	20	116	84	74	Normal	Yellow	Clear	-	-	-	-
448	Md	F	20	120	80	68	Normal	Yellow	Clear	-	-	-	-
449	Md	F	20	118	70	64	Normal	Yellow	Clear	-	-	-	-
450	Md	F	20	110	76	72	Normal	Yellow	Clear	-	-	-	-
451	Md	F	20	120	84	84	Normal	Yellow	Clear	-	-	-	-
452	Md	F	20	120	86	80	Normal	Yellow	Clear	-	-	-	-
453	Md	F	20	118	70	78	Normal	Yellow	Clear	-	-	-	-
454	Md	F	20	120	80	76	Normal	Yellow	Clear	-	-	-	-
455	Md	F	20	116	84	86	Normal	Yellow	Clear	-	-	-	-
456	Md	F	20	112	80	62	Normal	Yellow	Clear	-	-	-	-
457	Md	F	20	130	70	86	Normal	Yellow	Clear	-	-	-	-
458	Md	F	20	110	74	62	Normal	Yellow	Clear	-	-	-	-
459	Md	F	20	124	78	76	Normal	Yellow	Clear	-	-	-	-
460	Md	F	20	126	78	78	Normal	Yellow	Clear	-	-	-	-
461	Md	F	20	128	76	80	Normal	Yellow	Clear	-	-	-	-
462	Md	F	20	126	78	84	Normal	Yellow	Clear	-	-	-	-
463	Md	F	20	124	78	72	Normal	Yellow	Clear	-	-	-	Pt
464	Md	F	20	110	74	64	Normal	Yellow	Clear	-	-	-	-
465	Md	F	20	130	70	68	Normal	Yellow	Clear	-	-	-	-
466	Md	F	20	112	80	74	Normal	Yellow	Clear	-	-	-	-
467	Md	F	20	116	84	66	Normal	Yellow	Clear	-	-	-	-
468	Md	F	20	120	80	70	Normal	Yellow	Clear	-	-	-	-
469	Md	F	20	118	70	66	Normal	Yellow	Clear	-	-	-	-
470	Md	F	20	110	76	70	Normal	Yellow	Clear	-	-	-	-
471	Md	F	20	120	84	74	Normal	Yellow	Clear	-	-	-	-
472	Md	F	20	120	86	68	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
473	Md	F	20	118	70	64	Normal	Yellow	Clear	-	-	-	-
474	Md	F	20	120	80	72	Normal	Yellow	Clear	-	++	-	-
475	Md	F	20	116	84	84	Normal	Yellow	Clear	-	-	-	-
476	Md	F	20	112	80	80	Normal	Yellow	Clear	-	-	-	-
477	Md	F	18	130	70	78	Normal	Yellow	Clear	-	-	-	-
478	Md	F	18	110	74	76	Normal	Yellow	Clear	-	-	-	-
479	Md	F	18	124	78	86	Normal	Yellow	Clear	+	-	-	-
480	Md	F	18	126	78	62	Normal	Yellow	Clear	-	-	-	-
481	Md	F	18	128	76	86	Normal	Yellow	Clear	-	-	-	-
482	Md	F	18	126	78	62	Normal	Yellow	Clear	-	-	-	-
483	Md	F	18	124	78	76	Normal	Yellow	Clear	-	-	-	-
484	Md	F	18	110	74	78	Normal	Yellow	Clear	+	-	-	-
485	Md	F	18	130	70	80	Normal	Yellow	Clear	-	-	-	-
486	Md	F	18	112	80	84	Normal	Yellow	Clear	-	-	-	Pt
487	Md	F	18	116	84	72	Normal	Yellow	Clear	-	-	-	-
488	Md	F	18	120	80	64	Normal	Yellow	Clear	-	-	-	-
489	Md	F	18	118	70	68	Normal	Yellow	Clear	-	-	-	-
490	Md	F	18	110	76	74	Normal	Yellow	Clear	+	-	-	-
491	Md	F	18	120	84	66	Normal	Yellow	Clear	-	-	-	-
492	Md	F	18	120	86	70	Normal	Yellow	Clear	-	-	-	-
493	Md	F	18	118	70	66	Normal	Yellow	Clear	-	-	-	-
494	Md	F	18	120	80	70	Normal	Yellow	Clear	-	-	-	-
495	Md	F	18	116	84	74	Normal	Yellow	Clear	++	-	-	-
496	Md	F	18	112	80	68	Normal	Yellow	Clear	-	-	-	-
497	Md	F	18	130	70	64	Normal	Yellow	Clear	-	-	-	-
498	Md	F	18	110	74	72	Normal	Yellow	Clear	-	-	-	-
499	Md	F	18	124	78	84	Normal	Yellow	Clear	-	-	-	-
500	Md	F	18	126	78	80	Normal	Yellow	Clear	-	-	-	-
501	Md	F	18	128	76	78	Normal	Yellow	Clear	-	-	-	-
502	Md	F	18	126	78	76	Normal	Yellow	Clear	-	-	-	-
503	Md	F	18	124	78	86	Normal	Yellow	Clear	-	-	-	-
504	Md	F	18	110	74	62	Normal	Yellow	Clear	-	-	-	-
505	Md	F	18	130	70	86	Normal	Yellow	Clear	-	-	-	-
506	Md	F	18	112	80	62	Normal	Yellow	Clear	-	-	-	-
507	Md	F	18	116	84	76	Normal	Yellow	Clear	-	-	-	-
508	Md	F	18	120	80	78	Normal	Yellow	Clear	-	-	-	-
509	Md	F	18	118	70	80	Normal	Yellow	Clear	-	-	-	-
510	Md	F	18	110	76	84	Normal	Yellow	Clear	+	-	-	-
511	Md	F	18	120	84	72	Normal	Yellow	Clear	-	-	-	-
512	Md	F	18	120	86	64	Normal	Yellow	Clear	-	-	-	-
513	Md	F	18	118	70	68	Normal	Yellow	Clear	-	-	-	-
514	Md	F	18	120	80	74	Normal	Yellow	Clear	-	-	-	-
515	Md	F	18	116	84	66	Normal	Yellow	Clear	-	-	-	-
516	Md	F	18	112	80	70	Normal	Yellow	Clear	+	-	-	-
517	Md	F	18	130	70	66	Normal	Yellow	Clear	-	-	-	-
518	Md	F	18	110	74	70	Normal	Yellow	Clear	-	-	-	-
519	Md	F	18	124	78	74	Normal	Yellow	Clear	-	-	-	-
520	Md	F	18	126	78	68	Normal	Yellow	Clear	-	-	-	Pt
521	Md	F	18	128	76	64	Normal	Yellow	Clear	-	-	-	-
522	Md	F	18	126	78	72	Normal	Yellow	Clear	-	-	-	-
523	Md	F	18	124	78	84	Normal	Yellow	Clear	-	-	-	-
524	Md	F	18	110	74	80	Normal	Yellow	Clear	-	-	-	-
525	Md	F	18	130	70	78	Normal	Yellow	Clear	-	-	-	-
526	Md	F	18	112	80	76	Normal	Yellow	Clear	-	-	-	-
527	Md	F	18	116	84	86	Normal	Yellow	Clear	-	-	-	-
528	Md	F	18	120	80	62	Normal	Yellow	Clear	-	-	-	-
529	Md	F	18	118	70	86	Normal	Yellow	Clear	-	-	-	-
530	Md	F	18	110	76	62	Normal	Yellow	Clear	-	-	-	-
531	Md	F	18	120	84	76	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
532	Md	F	18	120	86	78	Normal	Yellow	Clear	-	-	-	-
533	Md	F	18	118	70	80	Normal	Yellow	Clear	-	-	-	-
534	Md	F	18	120	80	84	Normal	Yellow	Clear	++	-	-	-
535	Md	F	18	116	84	72	Normal	Yellow	Clear	+++	-	-	-
536	Md	F	18	112	80	64	Normal	Yellow	Clear	-	-	-	-
537	Md	F	18	130	70	68	Normal	Yellow	Clear	-	-	-	Pt
538	Md	F	18	110	74	74	Normal	Yellow	Clear	++	-	-	-
539	Dt	M	18	124	78	66	Normal	Yellow	Clear	-	-	-	-
540	Dt	M	18	126	78	70	Normal	Yellow	Clear	-	-	-	-
541	Dt	M	18	128	76	66	Normal	Yellow	Clear	-	-	-	-
542	Dt	M	18	126	78	70	Normal	Yellow	Clear	-	-	-	-
543	Dt	M	18	124	78	74	Normal	Yellow	Clear	-	-	-	-
544	Dt	M	18	110	74	68	Normal	Yellow	Clear	-	-	-	-
545	Dt	M	18	130	70	64	Normal	Yellow	Clear	-	-	-	-
546	Dt	M	18	112	80	72	Normal	Yellow	Clear	-	-	-	-
547	Dt	M	18	116	84	84	Normal	Yellow	Clear	-	-	-	-
548	Dt	M	18	120	80	80	Normal	Yellow	Clear	-	-	-	-
549	Dt	M	18	118	70	78	Normal	Yellow	Clear	-	-	-	-
550	Dt	M	18	110	76	76	Normal	Yellow	Clear	+	-	-	-
551	Dt	M	19	120	84	86	Normal	Yellow	Clear	-	-	-	-
552	Dt	M	19	120	86	62	Normal	Yellow	Clear	-	-	-	-
553	Dt	M	19	118	70	86	Normal	Yellow	Clear	+	-	-	-
554	Dt	M	19	120	80	62	Normal	Yellow	Clear	-	-	-	-
555	Dt	M	19	116	84	76	Normal	Yellow	Clear	+	-	-	-
556	Dt	M	20	112	80	78	Normal	Yellow	Clear	-	-	-	-
557	Dt	M	20	130	70	80	Normal	Yellow	Clear	-	-	-	-
558	Dt	M	20	110	74	84	Normal	Yellow	Clear	-	-	-	-
559	Dt	M	20	124	78	72	Normal	Yellow	Clear	-	-	-	-
560	Dt	M	20	126	78	64	Normal	Yellow	Clear	+	-	-	-
561	Dt	M	20	128	76	68	Normal	Yellow	Clear	-	-	-	-
562	Dt	M	20	126	78	74	Normal	Yellow	Clear	-	-	-	-
563	Dt	M	20	124	78	66	Normal	Yellow	Clear	-	-	-	-
564	Dt	M	20	110	74	70	Normal	Yellow	Clear	-	-	-	-
565	Dt	M	20	130	70	66	Normal	Yellow	Clear	-	-	-	-
566	Dt	M	20	112	80	70	Normal	Yellow	Clear	-	-	-	-
567	Dt	M	20	116	84	74	Normal	Yellow	Clear	-	-	-	-
568	Dt	M	20	120	80	68	Normal	Yellow	Clear	++	-	-	-
569	Dt	M	20	118	70	64	Normal	Yellow	Clear	-	-	-	-
570	Dt	M	20	110	76	72	Normal	Yellow	Clear	-	-	-	-
571	Dt	M	20	120	84	84	Normal	Yellow	Clear	-	+	-	-
572	Dt	M	20	120	86	80	Normal	Yellow	Clear	-	-	-	-
573	Dt	M	20	118	70	78	Normal	Yellow	Clear	-	-	-	-
574	Dt	M	20	120	80	76	Normal	Yellow	Clear	-	-	-	-
575	Dt	M	21	116	84	86	Normal	Yellow	Clear	-	-	-	-
576	Dt	M	21	112	80	62	Normal	Yellow	Clear	-	-	-	-
577	Dt	M	21	130	70	86	Normal	Yellow	Clear	-	-	-	-
578	Dt	M	21	110	74	62	Normal	Yellow	Clear	-	-	-	-
579	Dt	M	21	124	78	76	Normal	Yellow	Clear	-	-	-	-
580	Dt	M	21	126	78	78	Normal	Yellow	Clear	-	-	-	-
581	Dt	M	21	128	76	80	Normal	Yellow	Clear	-	-	-	-
582	Dt	M	21	126	78	84	Normal	Yellow	Clear	-	-	-	-
583	Dt	M	21	124	78	72	Normal	Yellow	Clear	-	-	-	-
584	Dt	M	21	110	74	64	Normal	Yellow	Clear	-	-	-	-
585	Dt	M	21	130	70	68	Normal	Yellow	Clear	+	-	-	-
586	Dt	M	21	112	80	74	Normal	Yellow	Clear	-	-	-	-
587	Dt	M	21	116	84	66	Normal	Yellow	Clear	-	-	-	-
588	Dt	M	21	120	80	70	Normal	Yellow	Clear	-	-	-	-
589	Dt	M	21	118	70	66	Normal	Yellow	Clear	-	-	-	-
590	Dt	M	21	110	76	70	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
591	Dt	M	21	120	84	74	Normal	Yellow	Clear	+	-	-	-
592	Dt	M	21	120	86	68	Normal	Yellow	Clear	-	-	-	-
593	Dt	M	21	118	70	64	Normal	Yellow	Clear	-	-	-	-
594	Dt	M	21	120	80	72	Normal	Yellow	Clear	-	-	-	-
595	Dt	M	21	116	84	84	Normal	Yellow	Clear	-	-	-	-
596	Dt	M	21	112	80	80	Normal	Yellow	Clear	-	-	-	-
597	Dt	M	21	130	70	78	Normal	Yellow	Clear	-	+	-	-
598	Dt	M	21	110	74	76	Normal	Yellow	Clear	-	-	-	-
599	Dt	M	21	124	78	86	Normal	Yellow	Clear	+	-	-	-
600	Dt	M	22	126	78	62	Normal	Yellow	Clear	-	-	-	-
601	Dt	M	22	128	76	86	Normal	Yellow	Clear	-	-	-	-
602	Dt	M	22	126	78	62	Normal	Yellow	Clear	-	-	-	-
603	Dt	M	22	124	78	76	Normal	Yellow	Clear	-	+	-	-
604	Dt	F	18	110	74	78	Normal	Yellow	Clear	-	-	-	-
605	Dt	F	18	130	70	80	Normal	Yellow	Clear	-	-	-	-
606	Dt	F	18	112	80	84	Normal	Yellow	Clear	-	-	-	-
607	Dt	F	18	116	84	72	Normal	Yellow	Clear	-	-	-	-
608	Dt	F	18	120	80	64	Normal	Yellow	Clear	-	+	-	-
609	Dt	F	18	118	70	68	Normal	Yellow	Clear	-	-	-	-
610	Dt	F	18	110	76	74	Normal	Yellow	Clear	-	-	-	-
611	Dt	F	18	120	84	66	Normal	Yellow	Clear	-	+	-	-
612	Dt	F	18	120	86	70	Normal	Yellow	Clear	-	-	-	-
613	Dt	F	18	118	70	66	Normal	Yellow	Clear	-	-	-	-
614	Dt	F	18	120	80	70	Normal	Yellow	Clear	-	-	-	-
615	Dt	F	18	116	84	74	Normal	Yellow	Clear	-	-	-	-
616	Dt	F	18	112	80	68	Normal	Yellow	Clear	-	-	-	-
617	Dt	F	18	130	70	64	Normal	Yellow	Clear	-	-	-	-
618	Dt	F	18	110	74	72	Normal	Yellow	Clear	-	-	-	-
619	Dt	F	18	124	78	84	Normal	Yellow	Clear	-	-	-	-
620	Dt	F	18	126	78	80	Normal	Yellow	Clear	-	-	-	-
621	Dt	F	18	128	76	78	Normal	Yellow	Clear	-	-	-	-
622	Dt	F	18	126	78	76	Normal	Yellow	Clear	-	-	-	-
623	Dt	F	18	124	78	86	Normal	Yellow	Clear	+	-	-	-
624	Dt	F	18	110	74	62	Normal	Yellow	Clear	-	-	-	-
625	Dt	F	18	130	70	86	Normal	Yellow	Clear	-	-	-	-
626	Dt	F	18	112	80	62	Normal	Yellow	Clear	-	-	-	-
627	Dt	F	18	116	84	76	Normal	Yellow	Clear	-	-	-	-
628	Dt	F	18	120	80	78	Normal	Yellow	Clear	-	-	-	-
629	Dt	F	18	118	70	80	Normal	Yellow	Clear	-	-	-	-
630	Dt	F	18	110	76	84	Normal	Yellow	Clear	-	-	-	-
631	Dt	F	18	120	84	72	Normal	Yellow	Clear	-	-	-	-
632	Dt	F	18	120	86	64	Normal	Yellow	Clear	-	-	-	-
633	Dt	F	18	118	70	68	Normal	Yellow	Clear	-	-	-	-
634	Dt	F	18	120	80	74	Normal	Yellow	Clear	-	-	-	Pt
635	Dt	F	18	116	84	66	Normal	Yellow	Clear	-	-	-	-
636	Dt	F	18	112	80	70	Normal	Yellow	Clear	-	-	-	-
637	Dt	F	18	130	70	66	Normal	Yellow	Clear	-	-	-	-
638	Dt	F	18	110	74	70	Normal	Yellow	Clear	-	-	-	-
639	Dt	F	18	124	78	74	Normal	Yellow	Clear	-	-	-	-
640	Dt	F	18	126	78	68	Normal	Yellow	Clear	-	-	-	-
641	Dt	F	18	128	76	64	Normal	Yellow	Clear	-	-	-	-
642	Dt	F	18	126	78	72	Normal	Yellow	Clear	-	-	-	-
643	Dt	F	18	124	78	84	Normal	Yellow	Clear	-	-	-	-
644	Dt	F	18	110	74	80	Normal	Yellow	Clear	-	-	-	-
645	Dt	F	18	130	70	78	Normal	Yellow	Clear	-	-	-	-
646	Dt	F	18	112	80	76	Normal	Yellow	Clear	-	-	-	-
647	Dt	F	18	116	84	86	Normal	Yellow	Clear	-	-	-	-
648	Dt	F	18	120	80	62	Normal	Yellow	Clear	-	-	-	-
649	Dt	F	18	118	70	86	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
650	Dt	F	18	110	76	62	Normal	Yellow	Clear	-	-	-	-
651	Dt	F	18	120	84	76	Normal	Yellow	Clear	-	-	-	-
652	Dt	F	18	120	86	78	Normal	Yellow	Clear	-	-	-	-
653	Dt	F	18	118	70	80	Normal	Yellow	Clear	-	-	-	-
654	Dt	F	18	120	80	84	Normal	Yellow	Clear	-	-	-	-
655	Dt	F	18	116	84	72	Normal	Yellow	Clear	-	-	-	-
656	Dt	F	18	112	80	64	Normal	Yellow	Clear	-	-	-	-
657	Dt	F	18	130	70	68	Normal	Yellow	Clear	-	-	-	-
658	Dt	F	18	110	74	74	Normal	Yellow	Clear	-	-	-	-
659	Dt	F	18	124	78	66	Normal	Yellow	Clear	-	-	-	-
660	Dt	F	18	126	78	70	Normal	Yellow	Clear	-	-	-	-
661	Dt	F	19	128	76	66	Normal	Yellow	Clear	-	-	-	-
662	Dt	F	19	126	78	70	Normal	Yellow	Clear	-	-	-	-
663	Dt	F	19	124	78	74	Normal	Yellow	Clear	-	+	-	-
664	Dt	F	19	110	74	68	Normal	Yellow	Clear	-	-	-	-
665	Dt	F	19	130	70	64	Normal	Yellow	Clear	-	-	-	-
666	Dt	F	19	112	80	72	Normal	Yellow	Clear	-	-	-	-
667	Dt	F	19	116	84	84	Normal	Yellow	Clear	-	-	-	-
668	Dt	F	19	120	80	80	Normal	Yellow	Clear	-	-	-	-
669	Dt	F	19	118	70	78	Normal	Yellow	Clear	-	-	-	-
670	Dt	F	19	110	76	76	Normal	Yellow	Clear	-	-	-	-
671	Dt	F	19	120	84	86	Normal	Yellow	Clear	+	-	-	-
672	Dt	F	19	120	86	62	Normal	Yellow	Clear	-	-	-	-
673	Dt	F	19	118	70	86	Normal	Yellow	Clear	-	-	-	-
674	Dt	F	19	120	80	62	Normal	Yellow	Clear	-	-	-	-
675	Dt	F	19	116	84	76	Normal	Yellow	Clear	-	-	-	-
676	Dt	F	19	112	80	78	Normal	Yellow	Clear	-	-	-	-
677	Dt	F	19	130	70	80	Normal	Yellow	Clear	-	-	-	-
678	Dt	F	19	110	74	84	Normal	Yellow	Clear	-	-	-	-
679	Dt	F	19	124	78	72	Normal	Yellow	Clear	-	-	-	-
680	Dt	F	19	126	78	64	Normal	Yellow	Clear	-	-	-	-
681	Dt	F	19	128	76	68	Normal	Yellow	Clear	-	-	-	-
682	Dt	F	19	126	78	74	Normal	Yellow	Clear	-	-	-	-
683	Dt	F	19	124	78	66	Normal	Yellow	Clear	-	-	-	-
684	Dt	F	19	110	74	70	Normal	Yellow	Clear	-	-	-	-
685	Dt	F	19	130	70	66	Normal	Yellow	Clear	-	-	-	-
686	Dt	F	19	112	80	70	Normal	Yellow	Clear	-	-	-	-
687	Dt	F	19	116	84	74	Normal	Yellow	Clear	-	-	-	-
688	Dt	F	19	120	80	68	Normal	Yellow	Clear	-	-	-	-
689	Dt	F	19	118	70	64	Normal	Yellow	Clear	-	+	-	-
690	Dt	F	19	110	76	72	Normal	Yellow	Clear	-	-	-	-
691	Dt	F	19	120	84	84	Normal	Yellow	Clear	-	-	-	-
692	Dt	F	19	120	86	80	Normal	Yellow	Clear	-	-	-	-
693	Dt	F	19	118	70	78	Normal	Yellow	Clear	-	-	-	-
694	Dt	F	19	120	80	76	Normal	Yellow	Clear	-	-	-	-
695	Dt	F	19	116	84	86	Normal	Yellow	Clear	-	-	-	-
696	Dt	F	19	112	80	62	Normal	Yellow	Clear	-	-	-	-
697	Dt	F	19	130	70	86	Normal	Yellow	Clear	-	-	-	-
698	Dt	F	19	110	74	62	Normal	Yellow	Clear	-	-	-	-
699	Dt	F	19	124	78	76	Normal	Yellow	Clear	-	-	-	-
700	Dt	F	19	126	78	78	Normal	Yellow	Clear	-	-	-	-
701	Dt	F	19	128	76	80	Normal	Yellow	Clear	-	-	-	-
702	Dt	F	19	126	78	84	Normal	Yellow	Clear	++	-	-	-
703	Dt	F	19	124	78	72	Normal	Yellow	Clear	-	-	-	-
704	Dt	F	19	110	74	64	Normal	Yellow	Clear	-	-	-	-
705	Dt	F	19	130	70	68	Normal	Yellow	Clear	-	-	-	-
706	Dt	F	19	112	80	74	Normal	Yellow	Clear	-	-	-	-
707	Dt	F	19	116	84	66	Normal	Yellow	Clear	-	-	-	-
708	Dt	F	19	120	80	70	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
709	Dt	F	19	118	70	66	Normal	Yellow	Clear	-	-	-	-
710	Dt	F	19	110	76	70	Normal	Yellow	Clear	-	-	-	-
711	Dt	F	19	120	84	74	Normal	Yellow	Clear	-	-	-	-
712	Dt	F	19	120	86	68	Normal	Yellow	Clear	-	-	-	-
713	Dt	F	19	118	70	64	Normal	Yellow	Clear	-	-	-	-
714	Dt	F	19	120	80	72	Normal	Yellow	Clear	-	-	-	-
715	Dt	F	19	116	84	84	Normal	Yellow	Clear	-	-	-	-
716	Dt	F	19	112	80	80	Normal	Yellow	Clear	-	-	-	-
717	Dt	F	19	130	70	78	Normal	Yellow	Clear	-	-	-	-
718	Dt	F	19	110	74	76	Normal	Yellow	Clear	+	-	-	-
719	Dt	F	19	124	78	86	Normal	Yellow	Clear	-	-	-	-
720	Dt	F	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
721	Dt	F	19	128	76	86	Normal	Yellow	Clear	-	-	-	-
722	Dt	F	19	126	78	62	Normal	Yellow	Clear	-	-	-	-
723	Dt	F	19	124	78	76	Normal	Yellow	Clear	-	-	-	-
724	Dt	F	19	110	74	78	Normal	Yellow	Clear	-	-	-	-
725	Dt	F	19	130	70	80	Normal	Yellow	Clear	-	-	-	-
726	Dt	F	19	112	80	84	Normal	Yellow	Clear	-	-	-	-
727	Dt	F	19	116	84	72	Normal	Yellow	Clear	-	-	-	-
728	Dt	F	19	120	80	64	Normal	Yellow	Clear	-	-	-	-
729	Dt	F	19	118	70	68	Normal	Yellow	Clear	+++	-	-	-
730	Dt	F	19	110	76	74	Normal	Yellow	Clear	-	-	-	-
731	Dt	F	19	120	84	66	Normal	Yellow	Clear	-	++	-	-
732	Dt	F	19	120	86	70	Normal	Yellow	Clear	-	-	-	-
733	Dt	F	19	118	70	66	Normal	Yellow	Clear	-	-	-	-
734	Dt	F	19	120	80	70	Normal	Yellow	Clear	-	-	-	-
735	Dt	F	19	116	84	74	Normal	Yellow	Clear	-	-	-	-
736	Dt	F	20	112	80	68	Normal	Yellow	Clear	-	-	-	-
737	Dt	F	20	130	70	64	Normal	Yellow	Clear	-	-	-	-
738	Dt	F	20	110	74	72	Normal	Yellow	Clear	-	-	-	-
739	Dt	F	20	124	78	84	Normal	Yellow	Clear	-	-	-	-
740	Dt	F	20	126	78	80	Normal	Yellow	Clear	-	-	-	-
741	Dt	F	20	128	76	78	Normal	Yellow	Clear	-	-	-	-
742	Dt	F	20	126	78	76	Normal	Yellow	Clear	-	-	-	-
743	Dt	F	20	124	78	86	Normal	Yellow	Clear	-	-	-	-
744	Dt	F	20	110	74	62	Normal	Yellow	Clear	-	-	-	-
745	Dt	F	20	130	70	86	Normal	Yellow	Clear	-	-	-	-
746	Dt	F	20	112	80	62	Normal	Yellow	Clear	-	-	-	-
747	Dt	F	20	116	84	76	Normal	Yellow	Clear	-	-	-	-
748	Dt	F	20	120	80	78	Normal	Yellow	Clear	+	-	-	-
749	Dt	F	20	118	70	80	Normal	Yellow	Clear	-	-	-	-
750	Dt	F	20	110	76	84	Normal	Yellow	Clear	-	-	-	-
751	Dt	F	20	120	84	72	Normal	Yellow	Clear	-	-	-	-
752	Dt	F	20	120	86	64	Normal	Yellow	Clear	-	-	-	-
753	Dt	F	20	118	70	68	Normal	Yellow	Clear	-	-	-	-
754	Dt	F	20	120	80	74	Normal	Yellow	Clear	-	-	-	-
755	Dt	F	20	116	84	66	Normal	Yellow	Clear	-	-	-	-
756	Dt	F	20	112	80	70	Normal	Yellow	Clear	-	-	-	-
757	Dt	F	20	130	70	66	Normal	Yellow	Clear	-	-	-	-
758	Dt	F	20	110	74	70	Normal	Yellow	Clear	+	-	-	-
759	Dt	F	20	124	78	74	Normal	Yellow	Clear	-	-	-	-
760	Dt	F	20	126	78	68	Normal	Yellow	Clear	+	-	-	-
761	Dt	F	20	128	76	64	Normal	Yellow	Clear	-	-	-	-
762	Dt	F	20	126	78	72	Normal	Yellow	Clear	-	-	-	-
763	Dt	F	20	124	78	84	Normal	Yellow	Clear	+	-	-	-
764	Dt	F	20	110	74	80	Normal	Yellow	Clear	-	-	-	-
765	Dt	F	20	130	70	78	Normal	Yellow	Clear	-	-	-	-
766	Dt	F	20	112	80	76	Normal	Yellow	Clear	-	-	-	-
767	Dt	F	20	116	84	86	Normal	Yellow	Clear	+	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
768	Dt	F	20	120	80	62	Normal	Yellow	Clear	-	-	-	-
769	Dt	F	20	118	70	86	Normal	Yellow	Clear	-	-	-	-
770	Dt	F	20	110	76	62	Normal	Yellow	Clear	-	-	-	-
771	Dt	F	20	120	84	76	Normal	Yellow	Clear	-	-	-	-
772	Dt	F	20	120	86	78	Normal	Yellow	Clear	-	-	-	-
773	Dt	F	20	118	70	80	Normal	Yellow	Clear	+	-	-	-
774	Dt	F	20	120	80	84	Normal	Yellow	Clear	++	-	-	-
775	Dt	F	20	116	84	72	Normal	Yellow	Clear	-	-	-	-
776	Dt	F	20	112	80	64	Normal	Yellow	Clear	-	-	-	-
777	Dt	F	20	130	70	68	Normal	Yellow	Clear	-	-	-	-
778	Dt	F	20	110	74	74	Normal	Yellow	Clear	-	-	-	-
779	Dt	F	20	124	78	66	Normal	Yellow	Clear	-	-	-	-
780	Dt	F	20	126	78	70	Normal	Yellow	Clear	-	-	-	-
781	Dt	F	20	128	76	66	Normal	Yellow	Clear	-	-	-	-
782	Dt	F	20	126	78	70	Normal	Yellow	Clear	-	-	-	-
783	Dt	F	20	124	78	74	Normal	Yellow	Clear	-	-	-	-
784	Dt	F	20	110	74	68	Normal	Yellow	Clear	-	-	-	-
785	Dt	F	20	130	70	64	Normal	Yellow	Clear	-	-	-	-
786	Dt	F	20	112	80	72	Normal	Yellow	Clear	-	-	-	-
787	Dt	F	20	116	84	84	Normal	Yellow	Clear	+	-	-	-
788	Dt	F	20	120	80	80	Normal	Yellow	Clear	-	-	-	-
789	Dt	F	20	118	70	78	Normal	Yellow	Clear	-	-	-	-
790	Dt	F	20	110	76	76	Normal	Yellow	Clear	-	-	-	-
791	Dt	F	20	120	84	86	Normal	Yellow	Clear	-	-	-	-
792	Dt	F	20	120	86	62	Normal	Yellow	Clear	-	-	-	-
793	Dt	F	20	118	70	86	Normal	Yellow	Clear	-	-	-	-
794	Dt	F	20	120	80	62	Normal	Yellow	Clear	-	-	-	-
795	Dt	F	20	116	84	76	Normal	Yellow	Clear	+	-	-	-
796	Dt	F	21	112	80	78	Normal	Yellow	Clear	-	-	-	-
797	Dt	F	21	130	70	80	Normal	Yellow	Clear	-	-	-	-
798	Dt	F	21	110	74	84	Normal	Yellow	Clear	-	-	-	-
799	Dt	F	21	124	78	72	Normal	Yellow	Clear	-	-	-	-
800	Dt	F	21	126	78	64	Normal	Yellow	Clear	-	-	-	-
801	Dt	F	21	128	76	68	Normal	Yellow	Clear	-	-	-	Pt
802	Dt	F	21	126	78	74	Normal	Yellow	Clear	-	-	-	-
803	Dt	F	21	124	78	66	Normal	Yellow	Clear	+	-	-	-
804	Dt	F	21	110	74	70	Normal	Yellow	Clear	-	-	-	-
805	Dt	F	21	130	70	66	Normal	Yellow	Clear	-	-	-	-
806	Dt	F	21	112	80	70	Normal	Yellow	Clear	-	-	-	-
807	Dt	F	21	116	84	74	Normal	Yellow	Clear	-	-	-	-
808	Dt	F	21	120	80	68	Normal	Yellow	Clear	-	-	-	-
809	Dt	F	21	118	70	64	Normal	Yellow	Clear	-	-	-	-
810	Dt	F	21	110	76	72	Normal	Yellow	Clear	-	-	-	Pt
811	Dt	F	21	120	84	84	Normal	Yellow	Clear	-	-	-	-
812	Dt	F	21	120	86	80	Normal	Yellow	Clear	-	+	-	-
813	Dt	F	21	118	70	78	Normal	Yellow	Clear	-	-	-	-
814	Dt	F	21	120	80	76	Normal	Yellow	Clear	-	-	-	-
815	Dt	F	21	116	84	86	Normal	Yellow	Clear	-	-	-	-
816	Dt	F	21	112	80	62	Normal	Yellow	Clear	-	-	-	-
817	Dt	F	21	130	70	86	Normal	Yellow	Clear	++	-	-	-
818	Dt	F	21	110	74	62	Normal	Yellow	Clear	-	-	-	-
819	Dt	F	21	124	78	76	Normal	Yellow	Clear	-	-	-	-
820	Dt	F	21	126	78	78	Normal	Yellow	Clear	-	-	-	-
821	Dt	F	21	128	76	80	Normal	Yellow	Clear	-	-	-	-
822	Dt	F	21	126	78	84	Normal	Yellow	Clear	-	-	-	-
823	Dt	F	21	124	78	72	Normal	Yellow	Clear	+++	-	-	-
824	Dt	F	21	110	74	64	Normal	Yellow	Clear	-	-	-	-
825	Dt	F	21	130	70	68	Normal	Yellow	Clear	-	+	-	-
826	Dt	F	21	112	80	74	Normal	Yellow	Clear	-	-	-	-

ANNEXURE IV - MASTER CHART

Sl. No.	Branch	Gender	Age (Years)	SBP	DBP	Pulse	Systemic exam	Urine colour	Appearance	Proteins	Blood	Glucose	Nitrite
827	Dt	F	21	116	84	66	Normal	Yellow	Clear	-	-	-	-
828	Dt	F	21	120	80	70	Normal	Yellow	Clear	-	-	-	Pt
829	Dt	F	21	118	70	66	Normal	Yellow	Clear	-	-	-	-
830	Dt	F	21	110	76	70	Normal	Yellow	Clear	-	+++	-	-
831	Dt	F	21	120	84	74	Normal	Yellow	Clear	-	-	-	-
832	Dt	F	21	120	86	68	Normal	Yellow	Clear	-	-	-	-
833	Dt	F	21	118	70	64	Normal	Yellow	Clear	-	-	-	-
834	Dt	F	21	120	80	72	Normal	Yellow	Clear	-	-	-	-
835	Dt	F	21	116	84	84	Normal	Yellow	Clear	-	-	-	-
836	Dt	F	21	112	80	80	Normal	Yellow	Clear	-	-	-	-
837	Dt	F	21	130	70	78	Normal	Yellow	Clear	-	-	-	-
838	Dt	F	21	110	74	76	Normal	Yellow	Clear	-	-	-	-
839	Dt	F	21	124	78	86	Normal	Yellow	Clear	-	-	-	-
840	Dt	F	21	126	78	62	Normal	Yellow	Clear	-	-	-	-
841	Dt	F	21	120	86	70	Normal	Yellow	Clear	-	-	-	-
842	Dt	F	21	118	70	76	Normal	Yellow	Clear	-	-	-	-
843	Dt	F	21	120	80	80	Normal	Yellow	Clear	-	-	-	-
844	Dt	F	21	116	84	84	Normal	Yellow	Clear	-	-	-	-
845	Dt	F	21	112	80	88	Normal	Yellow	Clear	-	-	-	-
846	Dt	F	22	130	70	66	Normal	Yellow	Clear	-	-	-	-
847	Dt	F	22	110	74	80	Normal	Yellow	Clear	-	-	-	-
848	Dt	F	22	124	78	84	Normal	Yellow	Clear	-	-	-	-
849	Dt	F	22	126	78	78	Normal	Yellow	Clear	-	-	-	-