

**A COMPARATIVE STUDY OF C-REACTIVE PROTEIN VS INITIAL LACTATE VS
LACTATE CLEARANCE IN CKD IN EMERGENCY DEPARTMENT**



PROJECT SUBMITTED TO

SAVEETHA COLLEGE OF ALLIED HEALTH SCIENCES (SCAHS)

SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES (SIMATS)

CHENNAI - 602 105.

**IN PARTIAL FULFILMENT OF THE UNIVERSITY REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF**

**BACHELOR OF SCIENCE HONS
(ALLIED HEALTH SCIENCE)**

TRAUMA CARE MANAGEMENT

**BY
D.ANUPRIYA**

2021-2025

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

DECLARATION

I declare that the project entitled “**A COMPARATIVE STUDY OF C-REACTIVE PROTEIN VS INITIAL LACTATE VS LACTATE CLEARANCE IN CKD IN EMERGENCY DEPARTMENT**” submitted by me for the award of degree **Bachelor of Science Hons – Allied Health Science** (TRAUMA CARE MANAGEMENT) is the record of original research work carried out by me during the period under the guidance of **DR.D.VINDHYA** and has not formed the basis for the award of any degree, diploma, associateship, fellowship, titles in this or any other university.

Date:

Signature of the Candidate:

D. ANU PRIYA

REG NO: 242101011

Place:

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

CERTIFICATE

This is to certify that this study titled “**A COMPARATIVE STUDY OF C-REACTIVE PROTEIN VS INITIAL LACTATE VS LACTATE CLEARANCE IN CKD IN EMERGENCY DEPARTMENT**” is a bonafide and genuine research work carried out by **D. ANU PRIYA (242101011)** in the Department of Trauma Care Management under our guidance during academic year (2021- 2025) and is being submitted in partial fulfillment of the Degree of **Bachelor of Science Hons Allied Health Science (Trauma Care Management)**.

Signature of Guide

Signature of HOD

DR. D. VINDHYA

Assistant Professor.

Department of Emergency Medicine.

SIMATS

Thandalam, Chennai-602105

DR. M.RAJADURAI

MBBS., MD (ANAE),FEM(RCGP-UK),FCCC,FLM

Professor & Head of the Department

Department Of Emergency Medicine

Saveetha Medical College and Hospital SIMATS

Thandalam, Chennai-602105

Signature of co-guide:

Mr. MANIKANDAN

Lecturer Of Trauma Care Management,

Saveetha College Of Allied Health Sciences,

Thandalam, Chennai-602105

BONAFIDE CERTIFICATE

This is to certify that this study titled “**A COMPARATIVE STUDY OF C-REACTIVE PROTEIN VS INITIAL LACTATE VS LACTATE CLEARANCE IN CKD IN EMERGENCY DEPARTMENT**” is a bonafide and genuine research work carried out by D. ANU PRIYA (242101011) in the Department of Trauma Care Management under our guidance Dr.M.RAJADURAI (PROFESSOR & HEAD OF THE DEPARTMENT, DEPARTMENT OF EMERGENCY MEDICINE, SAVEETHA MEDICAL COLLEGE AND HOSPITAL) during academic year (2021- 2025) and is being submitted in partial fulfillment of the Degree of Bachelor of Science Hons Allied Health Science (TCM).

Signature of Guide

Signature of HOD

DR. D. VINDHYA

ASSOCIATE PROFESSOR

Department of emergency medicine

SIMATS

Thandalam, Chennai-602105

DR. M.RAJADURAI

MBBS., MD (ANAE),FEM(RCGP-UK),FCCC,FLM

Professor & Head of the Department

DEPARTMENT OF EMERGENCY MEDICINE

SAVEETHA MEDICAL COLLEGE AND

HOSPITAL SIMATS

Thandalam, Chennai-602105

Signature of the Principal

DR. LAVANYA PRATHAP,

Professor & Principal

Saveetha College of Allied Health Sciences,

SIMATS,

Thandalam, Chennai - 602 105

ACKNOWLEDGEMENT

I consider the greatest privilege of one's life words of thanks may be written but the heart of mine goes beyond in search of words to think.

I lack in my wisdom to thank the incomparable wisdom of God without which my ambition would have remained a dream.

I thank Saveetha Institute of Medical And Technical Sciences for having given me a chance to undergo my study which I consider the greatest privilege of one's life.

I avail this opportunity to thank **Dr. N. M. VEERAIYAN, CHANCELLOR** for the care and all the facilities they have done.

My sincere thanks to **Dr. DEEPAK NAALASWAMY, PRO CHANCELLOR** for his motivation in the project work

My sincerest thanks to **Dr. SURESH KUMAR S, VICE CHANCELLOR** for his motivation in the project work

My sincere thanks to **Dr. ASHWANI KUMAR, PRO VICE CHANCELLOR** (Global Collaborations)

My sparks of gratitude to **Prof. Dr. SHREEJA, S. VARGHEESE, Registrar** who shows sincerity towards his work and performance.

I am highly thankful for my **Dean Dr. J. KUMUTHA, DEAN** who has been the institutional flag bearer and has led us throughout the term.

There was a situation where we needed the strong support and guidance of **Dr. LAVANYA, Principal**, Saveetha College Of Allied Health Sciences, who is always there walking us through the thick mud.

My sincere thanks to **Dr. M. RAJADURAI, (PROFESSOR & HEAD OF THE DEPARTMENT, DEPARTMENT OF EMERGENCY MEDICINE, SAVEETHA MEDICAL COLLEGE AND HOSPITAL)** for his valuable motivation in this project work.

I deeply thank my guide, project supervisor **Dr. D. VINDHYA**, Assistant professor for her valuable guidance, encouragement and suggestion through the work. Consultant monitoring and directions with encouragement received in all aspects towards the proportion of desertion

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

and in providing adequate knowledge which enabled timely and satisfactory completion of the project and also for her continual valuable contribution in this project.

My sincere thanks to all the patients and their attenders who actively participated and followed that advises that are given to them.

My sincere gratitude goes out to my **Parents, MR. S. KAMALESH** and whose constant guidance have been crucial to finishing this thesis. I sincerely appreciate their patience, efforts, and advice, all of which have enabled me to accomplish this major goal. It would not have been possible to achieve this without their affection and encouragement.

And most importantly my most heartfelt thanks to all my companions who shown their constant love throughout and served as another hand to my thesis completion.

D. ANU PRIYA

ABBREVIATIONS

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

LIST OF ABBREVIATIONS

| S.No | ABBREVIATION | FULL FORM |
|-------------|---------------------|-------------------------------------|
| 1 | CAD | CORONARY ARTERY DISEASE |
| 2 | CKD | CHRONIC KIDNEY DISEASE |
| 3 | CRP | C- REACTIVE PROTEIN |
| 4 | ESRD | END STAGE RENAL DISEASE |
| 5 | HS-CRP | HIGH SENSITIVITY C-REACTIVE PROTEIN |
| 9 | T2DM | TYPE 2 DIABETES MELLITUS |
| 10 | HTN | HYPERTENSION |
| 11 | PIC | PERCUTANEOUS CORONARY INTERVENTION |

CONTENTS

TABLE OF CONTENTS

| S.NO | CONTENT | PAGE NO |
|-------------|------------------------|----------------|
| 1 | INTRODUCTION | 11 |
| 2 | AIM AND OBJECTIVES | 15 |
| 3 | METHODOLOGY | 17 |
| 4 | REVIEW OF LITERATURE | 21 |
| 5 | RESULTS AND STATISTICS | 29 |
| 6 | DISCUSSION | 48 |
| 7 | CONCLUSION | 52 |
| 8 | REFERENCES | 54 |
| 9 | PRO FORMA | 57 |
| 10 | CASE RECORD FORM | 59 |
| 11 | CONSENT FORM | 61 |
| 12 | MASTER CHART | 64 |

TITLE

**A COMPARATIVE STUDY OF C-REACTION PROTEIN VS INITIAL
LACTATE VS LACTATE CLEARANCE IN CKD IN EMERGENCY
DEPARTMENT**

INTRODUCTION

Chronic kidney disease is a progressive and irreversible loss of renal function that leads to a cascade of metabolic, cardiovascular and systemic derangements. The presence of CKD complicates due to the altered physiological milieu, impaired toxin clearance, and increased susceptibility to infection and cardiovascular instability.

In the context of acute presentations such as breathlessness, and chest pain or systemic inflammatory response, it becomes imperative to have reliable biomarkers for early risk stratification, treatment monitoring, and prognostication.

Lactate is a marker for anaerobic metabolism, produced by cells during tissue hypoxia. In acutely ill patients, elevated lactate >2 mmol/L is associated with poor outcomes and correlates with the severity of hypoperfusion, particularly in sepsis and shock.

Lactate clearance, calculated as the percentage reduction in lactate levels over time, especially within the first 6 hours, is increasingly recognized as a resuscitation endpoint and prognostic marker. In CKD patients, where baseline lactate may be mildly elevated, the clearance over time provides a more reliable indicator of treatment response than the absolute initial value

MECHANISMS

Dialysis related factors: dialysis, particularly haemodialysis, can stimulate cytokine release via complement activation and endotoxin exposure.

IMPLICATIONS

Elevated CRP is associated with poor outcomes, including cardiovascular events, malnutrition inflammation, atherosclerosis syndrome and mortality. It is also a sensitive, though non-specific marker of acute infection in CKD patients, especially when baseline levels are already elevated.

ELEVATED LACTATE: IMPAIRED METABOLISM AND HYPOPERFUSION

In CKD, lactate levels may rise due to both increased production and reduced clearance, with or without tissue hypoxia.

MECHANISMS

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

- **Reduced renal clearance:** The kidneys contribute significantly to lactate clearance (30%) reduced GFR leads to impaired gluconeogenic function and lactate accumulation.
- **Tissue Hypoxia:** Anemia, cardiac dysfunction and microvascular disease in CKD patients reduce oxygen delivery at the tissue level, promoting anaerobic glycolysis.
- **Sepsis and Shock States:** CKD patients are predisposed to infection and sepsis, which induce elevated lactate via impaired oxygen utilization and altered microcirculation

The various biomarkers used in the emergency department, C-Reactive protein and Arterial blood gas stand out for their clinical utility in detecting inflammation and tissue hypoperfusion, respectively. This research focuses on comparing CRP, INITIAL LACTATE, and 6TH HOUR LACTATE CLEARANCE in CKD patients presenting to the EMERGENCY DEPARTMENT, examining their relative roles in identifying severity, predicting outcomes and guiding early resuscitative efforts.

INTERPLAY BETWEEN CRP AND LACTATE IN CKD

In the emergency department or ICU, elevated CRP and lactate often coexist in critically ill CKD patients. Their combination often signifies systemic inflammatory response with impaired perfusion as in:

- Urosepsis in ESRD
- Dialysis catheter infections
- Cardiorenal syndrome with tissue hypoxia
- Septic shock in peritoneal dialysis
- Elevated c- reactive protein: a chronic inflammatory state

WHY IT IS IMPORTANT TO INVESTIGATE THIS ISSUE

1. INCREASED VULNERABILITY IN CKD PATIENTS

CKD patients have altered immune responses and metabolic profiles, making them more prone to sepsis, shock and poor outcomes.

Biomarkers like CRP and lactate may vary differently in these patients due to reduced renal clearance and chronic inflammation.

2. NEED FOR RAPID RISK STRATIFICATION IN THE ED

Emergency physicians need quick, reliable tools to predict which CKD patients are at high risk of mortality or ICU admission.

3. POTENTIAL PROGNOSTIC VALUE OF CRP AND LACTATE

CRP is a well-known marker of inflammation and lactate is a marker of tissue hypoperfusion.

Lactate clearance over time (e, g., 6 hours) has been shown in this research to predict clinical outcomes

This research is necessary because CKD patients are at a high risk of complications in emergency department commonly used biomarkers like CRP and lactate, may behave differently due to impaired kidney function. Studying these markers can improve early risk assessment, guide timely intervention and ultimately improve outcomes

C-REACTIVE PROTEIN

Acute phase reactant produced by the liver in response to inflammation, infection and tissue injury. In patients with CKD, particularly those in stages 3-5, baseline CRP levels are elevated due to a chronic inflammatory state associated with uremia, endothelial dysfunction, and comorbid conditions such as atherosclerosis. Despite this limitation, CRP remains a valuable marker for identifying superimposed infections or acute exacerbations. Elevated CRP levels may support the presence of an underlying septic or inflammatory process, although it lacks specificity for hypoperfusion.

INITIAL LACTATE

In CKD patients, lactate clearance is partially impaired due to decreased renal excretion. Initial lactate measurement on presentation provides rapid and dynamic insight into the patients' hemodynamic status and risk of mortality.

6TH HOUR LACTATE CLEARANCE

A lactate clearance of $>10\%$ at 6 hours is generally associated with improved outcomes and is often used to evaluate the efficacy of fluid resuscitation, vasopressor therapy, and infection

control measures. In contrast poor or absent lactate clearance suggests persistent tissue hypoxia, ongoing inflammation or impending organ failure, prompting escalation of care.

REVIEW OF LITERATURE

1. INFLAMMATORY MARKERS AND PROGNOSIS IN CKD PATIENTS

C-Reactive protein is a widely used inflammatory biomarker associated with systemic inflammation, infection and sepsis. In chronic kidney disease, baseline CRP levels are often elevated due to proinflammatory state, complicating its interpretation in acute scenarios like sepsis or acute illness in the Emergency department

Zimmermann et al. (1999) reported elevated baseline CRP in CKD patients, independent of acute infections.

Stenvinkel et al. (2002) described inflammation as a key component of CKD progression and morbidity, reducing the specificity of CRP as a prognostic marker in this population.

2. LACTATE AS A MARKER OF TISSUE HYPOPERFUSION:

Lactate is a marker of anaerobic metabolism and tissue hypoperfusion, commonly used in sepsis and critical illness to guide resuscitation efforts

In CKD patients the metabolism of lactate is generally preserved unless there is hepatic dysfunction but acid base disturbances in CKD may complicate lactate interpretation.

3. LACTATE CLEARANCE AS A DYNAMIC PROGNOSTIC MARKER

Lactate clearance, particularly at 6 hour is increasingly recognized as a dynamic marker of resuscitation efficacy and prognosis.

Nguyen et al. (2004) found that early lactate clearance is associated with decreased mortality in septic shock patients.

Arnold et al. (2009) emphasized that lactate clearance >10% within the first 6 hours correlated with improved outcomes in critically ill patients.

Andersen et al. (2013) noted that lactate metabolism is affected in CKD due to reduced renal gluconeogenesis and potential mitochondrial dysfunction.

Hsu et al. (2017) discussed the effect of renal dysfunction on lactate kinetics, noting higher baseline lactate levels and delayed clearance in patients with CKD.

4. USE OF LACTATE AND LACTATE CLEARANCE IN THE EMERGENCY DEPARTMENT

In Emergency department, lactate is used as a rapid indicator of severity. Lactate clearance has emerged as a superior marker compared to static lactate values for risk stratification and prognosis

Mikkelsen et al. (2009) showed that lactate clearance is a better predictor of mortality than initial lactate in ED patients with sepsis.

Bakker et al. (2016) recommended serial lactate measurement as part of goal-directed therapy in shock management.

5. CURRENT GAPS AND FUTURE DIRECTIONS

There is large scale, prospective studies specifically evaluating lactate clearance in CKD patients in the Emergency Department

Research is needed to in this subgroup define appropriate cutoff values and timelines of lactate clearance in this subgroup

Integration of lactate clearance with other biomarkers (e.g.,) CRP improve prognostic accuracy.

AIM AND OBJECTIVES

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

AIM

This study aims to compare CRP, initial lactate, and 6-hour lactate clearance in CKD patients to determine their relative predictive value in assessing disease severity and outcomes.

OBJECTIVES

To compare the prognostic value of C-reactive protein (CRP), baseline lactate levels, and 6-hour lactate clearance in patients with chronic kidney disease (CKD).

To evaluate the correlation between CRP levels and patient outcomes such as morbidity and mortality in CKD.

To determine if 6-hour lactate clearance provides a better prognostic indicator than static lactate measurements or CRP in CKD patients

PRINCIPAL RESEARCH QUESTIONS FRAMING THE STUDY

Does 6-hour lactate clearance provide a better prognostic indicator than CRP or initial lactate levels in CKD patients?

Among CRP, initial lactate, and 6-hour lactate clearance, which biomarker shows the strongest association with poor clinical outcomes in CKD?

Can lactate clearance be used as a dynamic marker for predicting the need for ICU care, renal replacement therapy, or in-hospital mortality in CKD patients

HYPOTHESIS

Null Hypothesis (H_0):

There is no significant difference in the prognostic value of C-Reactive Protein (CRP), initial lactate, and 6-hour lactate clearance in predicting clinical outcomes in chronic kidney disease (CKD) patients in the emergency department.

Alternative Hypothesis (H_1):

There is a significant difference in the prognostic value of CRP, initial lactate, and 6-hour lactate clearance in predicting clinical outcomes in CKD patients in the emergency department, with 6-hour lactate clearance being the most reliable prognostic marker.

METHODOLOGY

STUDY SETTING

The prospective observational study was conducted in the Emergency Department of Saveetha Medical College and Hospital over a duration of one year (2024-2025). It included 106 adult CKD patients (Stages 3–5) with suspected infection or sepsis. The study was both retrospective and prospective in design.

PROS:

- Real-time data and observation-based inputs included.
- Critically ill population ensured relevance to emergency clinical care.
- High translational value in emergency medicine practice.

CONS:

- Single-center study limited to the emergency setting
- Possibility of variation in intubation drug protocols
- Potential for missing or incomplete data during high-acuity events

ETHICAL APPROVAL NUMBER:

The study was approved by the Institutional Ethics Committee (IEC No: 005/06/2025/IEC/SMCH), Saveetha Medical College and Hospital.

STUDY DESIGN

Both retrospective and prospective study conducted in the emergency department of a tertiary care hospital

SAMPLING SIZE

A total of 104 chronic kidney patients in the emergency department were included in the study

DURATION:

- 2024-2025

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Sample form and summary:

All patients who met inclusion criteria were enrolled using convenience sampling. Chronic kidney patients who were admitted due to a variety of life threatening conditions including breathlessness, septic shock, pulmonary edema. The following predictors were assessed

- Age more than 18 years
- Diagnosis of chronic kidney patients
- Admitted with suspected infection, sepsis and acute deterioration
- Initial and 6th hour lactate value
- c-Reactive protein

Case Sheet Verification and Bias Minimization:

All case sheets were reviewed against emergency records and EMRs by the primary investigator and faculty supervisor. Discrepancies (e.g., mismatched times, missing vitals) were resolved by referring to treating physicians or source documents. A standardized proforma was used for all entries. Efforts to minimize sampling bias included the use of strict inclusion/exclusion criteria and complete enumeration of eligible patients during the study period.

INTERNAL VALIDITY

- Adults aged ≥ 18 years
- Diagnosed with Stage 3–5 CKD
- Admitted with suspected infection, sepsis, or acute deterioration

EXTERNAL VALIDITY:

- Patients who died or were discharged before 6-hour lactate sample
- Patients who decline hospital admission or choose to self-discharge against medical advice.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

DATA COLLECTION:

PROFORMA:

Structured proforma included the following parameters:

- Demographic details (age, gender)
- Clinical diagnosis and comorbidities
- Chief complaints
- C-reactive protein value
- Initial lactate
- 6th hour lactate value
- Lactate clearance
- Urea
- Creatinine
- Outcome

DATA VERIFICATION:

All data entries were verified by D. ANU PRIYA,, Final Year B.Sc Trauma Care Management Intern under the supervision of Mr. Manikandan, Faculty of Allied Health Sciences. In case of ambiguity, the treating physician was consulted. Conflicting entries were resolved through source verification

DATA SOFTWARE:

All cleaned and verified data were imported into IBM SPSS Statistics Version 25.0. Variables were labeled appropriately, and system-missing codes were used for excluded values

STATISTICAL ANALYSIS

STATISTICAL PROCEDURES:

Descriptive statistics were used to summarize baseline variables such as age, gender, vital signs, and comorbidities. Associations between predictors and PIH were analyzed using Chi-square and Mann-Whitney U analysis test for categorical variables. Logistic regression was used to determine significant predictors of chronic kidney patients

Software Used:

Statistical analysis was performed using IBM SPSS Version 25.0 (IBM Corp., Armonk, NY, USA).

INDEPENDENT VARIABLES:

- AGE
- GENDER
- VITALS
- C- REACTIVE PROTEIN VALUE
- INITIAL LACTATE
- 6TH HOUR LACTATE
- LACTATE CLEARANCE
- UREA
- CREATININE
- OUTCOME

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Review 1

ROLE OF C-REACTIVE PROTEIN IN KIDNEY DISEASES

Li, Jiaxiao, et al. "Role of C-Reactive Protein in Kidney Diseases." Kidney and Blood Pressure Research, vol. 47, no. 12, 2022, pp. 737–750. S. Karger AG

C- Reactive protein is a pentameric protein consisting of five identical subunits, is the prototypical acute phase protein in response to infection and inflammation. In acute infection or inflammation, C- Reactive protein can be secreted at the beginning of 4-10 hours following inflammatory stimulation, peaking at 48 hours with a short half-life of 19 hours. Whereas, continuing high levels of C-Reactive protein may induce chronic inflammation, as reported in patients with chronic kidney disease or end stage renal disease. Therefore, elevated C-Reactive protein level is considered a biomarker for inflammatory response, tissue injury and chronic progression of diseases. C-Reactive protein is often compared with other biomarkers such as procalcitonin and lactate in sepsis or acute illness. While lactate reflects tissue hypoxia and metabolic stress, C-Reactive protein provides a broader view of inflammatory status. Chronic kidney disease is characterized as progressive loss of renal function. Inflammation and fibrosis are common pathological features that contribute to the progression of chronic kidney disease. It has been well established that C- Reactive protein is a risk factor of chronic kidney disease, elevated serum levels of c-reactive protein are also associated with mortality and morbidity of chronic kidney disease. In chronic kidney disease patients, a high c- reactive protein level is found to be a predictor of cardiovascular events and an independent risk factor for all cause mortality in stage 3 and 4 chronic kidney disease patients. It is highly possible that high c-reactive protein may promote the infiltration of inflammatory cells and release of cytokines, chemokines and TGF-BETA. Hence the interplay between inflammation and fibrosis is a major determinant in the progression of chronic kidney disease in response to c-reactive protein.

Review 2

THE CUMULATIVE EXPOSURE TO HIGH SENSITIVITY C-REACTIVE PROTEIN PREDICTS THE RISK OF CHRONIC KIDNEY DISEASE

Gao, Jingli, et al. "The Cumulative Exposure to High Sensitivity C-Reactive Protein Predicts the Risk of Chronic Kidney Disease." Kidney and Blood Pressure Research, vol. 44, no. 6, 2019, pp. 749–757. S. Karger AG

This study was to characterize the association of cumulative exposure to increased high sensitivity c- reactive protein with chronic kidney diseases. The kailuan study is a cohort study on risk factors for cardiovascular on risk factory of cardiovascular disease based on community population. We included 35,194 participants with Hs-CRP measured at three examinations in 2006, 2008, 2010. Participants were classified into non exposed group (Hs-CRP <3.0mg/L in all 3 examinations, 1 exposed group (Hs-CRP \geq 3.0 mg/L in 1 of the 3 examinations), 2-exposed group (Hs-CRP \geq 3.0 mg/L in 2 of the 3 examinations) and 3-exposed group (Hs-CRP \geq 3.0 mg/L in 3 examinations). Cox proportional hazards models were used to assess the association of cumulative Hs-CRP with incident CKD. CKD includes an estimated glomerular filtration rate (eGFR) <60mL/min/1.73 or urinary protein positive. The study showed the risk of CKD as the number of years of exposure to s-CRP increases. Participants in 3-exposed group had significantly increased CKD risk with hazard ratio (HR) (95% confidence interval, CI) of 1.70 (1.49–1.93), in comparison with 1.47 (1.34–1.62) for participants in the 2-exposed group, and 1.08 (1.00–1.16) for those in the 1-exposed group (p < 0.01); mean-while, the similar and significant associations were also observed for eGFR <60 mL/min/1.73

Review 3

ROLE OF HIGH SENSITIVITY C-REACTIVE PROTEIN AS A MARKER OF INFLAMMATION AND ITS PROGNOSTIC SIGNIFICANCE IN CHRONIC KIDNEY DISEASE PATIENTS

Khunte, Sanjeev Kumar, Jitendra Kumar, and Prakash Khunte. "Role of High Sensitivity C-Reactive Protein as a Marker of Inflammation and Its Prognostic Significance in Chronic Kidney Disease Patients." International Journal of Advances in Medicine, vol. 6, no. 2, 2019, pp. 335–340.

This cross-sectional observation study was conducted in Rajendra institute of medical sciences, Ranchi during study period October 2015 to September 2017 on admitted patients with chronic kidney disease. 90 patients of different age groups between 16-75 years were enrolled in the study. Samples were selected by using a simple random sampling method. 85.6% of the patients studied were males and 14.4% of the patients were females. Most cases of CKD were associated with hypertension (77.8%) out of which there were 62 males and 8 females, followed by DM (25.5%) where there were 20 males and 3 females. 44.4% cases had an elevated level of Hs-CRP patients, 35 were male and 5 were female. Patients with elevated creatinine levels had significantly high Hs-CRP levels

Review 4

ASSOCIATION BETWEEN HIGH SENSITIVITY C-REACTIVE PROTEIN AND DIABETIC CHRONIC KIDNEY DISEASE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

Tang, Min, et al. "Association Between High Sensitivity C-Reactive Protein and Diabetic Chronic Kidney Disease in Patients With Type 2 Diabetes Mellitus." Frontiers in Endocrinology, vol. 13, 2022, article 885516.

This study aimed to identify the correlation between Hs-CRP levels and diabetic kidney disease in patients with T2DM. This cross sectional and observational study included n=927 patients with T2DM. Collected the data of patients based on their medical data, including sociodemographic characteristics, laboratory data results and medical therapy. Diabetes mellitus has become a major and serious threat to global human health. T2DM has 90% proportion of DM, which is featured by insulin resistance and relatively insufficient insulin secretion. In total, 927 patients were recruited in our study. The median age of the recruited patients was 55 years, and there were 346 female patients and 581 male patients. The Hs-CRP levels were evidently higher in patients with DKD than those without DKD. After adjusting for age, sex, diastolic blood pressure, systolic blood pressure, body mass index, neck circumference, waist circumference, hypertension, duration of diabetes, common carotid artery plaque, fasting plasma glucose, glycated haemoglobin, haemoglobin, erythrocyte, leukocyte, γ -glutamyl transferase, albumin, urea nitrogen, uric acid and triglyceride, a significant increase in the odds ratios (ORs) for DKD in the fourth Hs-CRP quartile compared with the first quartile was observed (P value for trend= 0.003), and the ORs (95% confidence intervals) in the fourth quartile of Hs-CRP were 1.968 (1.244–3.114) for DKD

compared to the first quartile.. Moreover, the RCS curves presented a positive association between Hs-CRP and DKD in total subjects, male subjects and female subjects, respectively. The results of our study indicated that Hs-CRP levels were significantly and positively correlated with the presence of DKD, which may provide predictive and diagnostic values in clinical practice.

Review 5

COMPARISON OF HIGH SENSITIVITY C-REACTIVE PROTEIN LEVEL BETWEEN CHRONIC KIDNEY DISEASE STAGES

Thaha, Mochammad, et al. "Comparison of High Sensitivity C-Reactive Protein Level Between Chronic Kidney Disease Stages." Biomolecular and Health Science Journal, vol. 1,2018

This research is to evaluate the Hs-CRP level comparison between CKD stages in Dr. Soetomo General Hospital Surabaya. An analytic observational cross-sectional study, evaluating the differences of Hs-CRP level between CKD stages in 72 patients (mean age 55.49 ± 7.62 years, the ratio between male and female was 1:1.48, mean BMI 24.18 ± 3.64 kg/m², 36.11% diabetics, 43.05% on ACEI/ARB, 29.16% on statin), recruited from Nephrology Outpatient Clinic, Dr Soetomo General Hospital, Surabaya, from January to May 2014. The stages were stratified according to the MDRD formula. The mean Hs-CRP of CKD stage 3 was 2.29 ± 2.86 , stage 4 was 2.48 ± 2.19 , and non-dialysis stage 5 was 2.09 ± 2.54 . The analysis using Kruskal-Wallis's test showed no significant differences among patients with CKD stage 3, stage 4, and non-dialysis stage 5 (median 1.25 vs 1.80 vs 1.05 mg/L; $p=0.430$). No significant differences of the serum Hs-CRP level were detected between diabetics and non-diabetics in stage 3, 4, and non-dialysis stage 5 ($p=0.673$ vs 0.666 vs 0.138); between patients with and without ACEI/ARB treatment ($p=0.610$ vs 0.649 vs 0.671); and between patients with and without statin treatment ($p=0.852$ vs 0.341 vs 0.309). The elevation of serum Hs-CRP level cannot indicate the decline of kidney function, but it still needs further investigations.

Review 6

PROGNOSTIC VALUE OF HIGH SENSITIVITY C-REACTIVE PROTEIN AMONG CHRONIC KIDNEY DISEASE PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

Jones, D. et al., 2023. Prognostic value of high-sensitivity C-reactive protein among chronic kidney disease patients undergoing percutaneous coronary intervention. Journal of Cardiology

In this analysis, patients who underwent PCI between January 2012 and December 2019, with an available baseline GFR and Hs-CRP value at time of index PCI were included. Exclusion criteria were haemodialysis or known disease processes that cause elevated Hs-CRP levels such as acute myocardial infarction (MI), acute heart failure, and neoplastic disease. Patients with a Hs-CRP level >10 mg/L were excluded due to the potential of active infection. Among 12,410 patients, 3029 were defined as CKD (24.4 %) and 9381 (75.6 %) as no-CKD. A baseline Hs-CRP level > 3 mg/L was observed in 964 (31.8 %) CKD and 2418 (25.8 %) no-CKD patients. Baseline and procedural characteristics stratified by CKD status and Hs-CRP level. Among patients undergoing PCI not in the setting of an acute MI, Hs-CRP levels >3 mg/L were associated with a 2-times higher risk of mortality at 1 year in CKD patients and 3-times higher hazard in no-CKD patients. Elevated Hs-CRP did not predict the 1-year occurrence of MACE, MI, or TVR. The prognostic value of Hs-CRP was not affected by the presence of baseline CKD.

Review 7

LACTATE CLEARANCE IN THE ACUTELY TRAUMATIZED PATIENT

Jones, Alan E. "Lactate Clearance in the Acutely Traumatized Patient." Anesthesiology, vol. 117, no. 6, Dec. 2012

This study aimed to determine whether early lactate clearance, defined as a reduction of more than 20% per hour, serves as a reliable prognostic marker in acutely trauma patients beyond the initial lactate measurement and conventional trauma scoring system. This was an observational cohort study involving 586 patients (mean age 38±16 years; ~56% had elevated lactate on admission). The majority sustained blunt trauma (84%) while the rest had penetrating injuries. Blood lactate levels were measured at admission 2 hours, 4 hours with

lactate clearance (LC) calculated over 0-2 hours and 2-4 hours intervals. The study found that early lactate clearance over 0–2 hours was moderately correlated with overall clearance at 4 hours ($r = 0.55$, $p < 0.001$) and was independently associated with improved survival, whereas clearance between 2–4 hours had no significant association ($r = 0.04$). The results highlighted that early lactate clearance is a superior dynamic marker for assessing response to resuscitation and predicting mortality in trauma patients.

Review 8

LACTATE CLEARANCE IS ASSOCIATED WITH MORTALITY IN SEPTIC PATIENTS WITH ACUTE KIDNEY INJURY REQUIRING CONTINUOUS RENAL REPLACEMENT THERAPY

da Hora Passos, Rogério, et al. "Lactate Clearance Is Associated with Mortality in Septic Patients with Acute Kidney Injury Requiring Continuous Renal Replacement Therapy: A Cohort Study." Medicine, vol. 95, no. 40, 2016,

This observational cohort study aimed to evaluate whether lactate levels and early lactate clearance could predict mortality in septic patients with acute kidney injury (AKI) requiring continuous renal replacement therapy (CRRT). Conducted in three intensive care units over five years, the study included **186** critically ill adult patients with sepsis and AKI who underwent CRRT. Lactate levels were measured at the start of CRRT and again after 24 hours, and lactate clearance was calculated to assess its prognostic value. The results showed that while initial lactate levels were higher in non-survivors, they were not independently predictive of mortality. In contrast, both 24-hour lactate levels and lactate clearance were significantly associated with mortality at 48 hours and 28 days. Patients with a lactate clearance of 10% or more within the first 24 hours had better survival outcomes. Receiver operating characteristic analysis confirmed that 24-hour lactate had a stronger predictive value than initial lactate, indicating that serial lactate measurements, particularly at 24 hours, are more reliable indicators of prognosis in this patient population. The study concluded that monitoring lactate dynamics—especially clearance—provides crucial information for early risk stratification and may help guide therapeutic decisions in septic AKI patients undergoing CRRT.

Review 9

LACTATE CLEARANCE IS ASSOCIATED WITH IMPROVED SURVIVAL IN CARDIOGENIC SHOCK: A SYSTEMATIC REVIEW AND META-ANALYSIS OF PROGNOSTIC FACTOR STUDIES

Marbach, Jeffrey A., et al. "Lactate Clearance Is Associated with Improved Survival in Cardiogenic Shock: A Systematic Review and Meta-Analysis of Prognostic Factor Studies." Journal of Cardiac Failure, vol. 27, no. 10, Oct. 2021, pp. 1082–1089. <https://doi.org/10.1016/j.cardfail.2021.08.012>.

The systematic review and meta-analysis titled "*Lactate Clearance Is Associated With Improved Survival in Cardiogenic Shock*" aimed to evaluate the prognostic value of lactate clearance in predicting mortality among adult patients with cardiogenic shock. This observational study analysed data from 12 eligible prognostic factor studies that included both prospective and retrospective cohorts, with a median sample size of 87 patients and a mean age of 56 years. Researchers systematically searched multiple databases, extracted data independently, and assessed study quality and heterogeneity. The primary focus was on comparing lactate clearance between survivors and non-survivors at two critical time points: 6–8 hours and 24 hours. Results showed that at 6–8 hours, survivors had a significantly higher median lactate clearance of 21.9% compared to just 0.6% in non-survivors, with a pooled mean difference of 17.3% ($P < .001$), indicating low heterogeneity. At 24 hours, the difference was even more pronounced—survivors cleared a median of 60.7% of lactate compared to 40.3% in non-survivors, with a pooled mean difference of 27.9% ($P < .001$), although with greater heterogeneity. Sensitivity analyses confirmed consistent results across various mortality endpoints, including ICU, in-hospital, and 30-day mortality. These findings demonstrate that greater lactate clearance, especially in the first 24 hours, is strongly associated with improved survival in cardiogenic shock, supporting its use as a valuable early prognostic biomarker. However, the study also emphasized the need for further prospective trials to evaluate whether targeting lactate clearance in treatment protocols can improve outcomes.

Review 10

LACTATE CLEARANCE IS A USEFUL BIOMARKER FOR THE PREDICTION OF ALL CAUSE-MORTALITY IN CRITICALLY ILL PATIENTS: A SYSTEMATIC REVIEW AND META ANALYSIS

Zhang, Zhongheng, and Xiao Xu. "Lactate Clearance Is a Useful Biomarker for the Prediction of All-Cause Mortality in Critically Ill Patients: A Systematic Review and Meta-Analysis." Critical Care Medicine, vol. 42, no. 9, Sept. 2014, pp. 2118–2125. <https://doi.org/10.1097/CCM.0000000000000405>

The systematic review and meta-analysis titled "*Lactate Clearance Is a Useful Biomarker for the Prediction of All-Cause Mortality in Critically Ill Patients*" aimed to evaluate the prognostic significance of lactate clearance across various critical illnesses. This comprehensive observational analysis included 15 studies involving a total of 4,776 critically ill adult patients from diverse clinical settings, including sepsis, trauma, post-surgical, and mixed ICU populations. results demonstrated that patients with high lactate clearance had a significantly reduced risk of all-cause mortality, with a relative risk (RR) of 0.38 (95% CI 0.29–0.50), indicating that those who cleared lactate effectively were approximately 62% less likely to die, The diagnostic performance of lactate clearance as a mortality predictor showed a pooled sensitivity of 75% and specificity of 72%, which was further improved in ICU-only subgroups (sensitivity 83%, specificity 67%). These findings support lactate clearance as a powerful, non-invasive, and dynamic biomarker for early risk stratification in critically ill patients, although the authors emphasized the need for standardized clearance thresholds and time points to enhance its clinical applicability and integration into treatment protocols.

Review 11

CLINICAL SIGNIFICANCE OF LACTATE CLEARANCE IN PATIENTS WITH CARDIOGENIC SHOCK: RESULTS FROM THE RESCUE REGISTRY

Park, Ik Hyun, et al. "Clinical Significance of Lactate Clearance in Patients with Cardiogenic Shock: Results from the RESCUE Registry." Journal of Intensive Care, vol. 9, no. 1, 2021,

The study titled "*Clinical Significance of Lactate Clearance in Patients with Cardiogenic Shock: Results from the RESCUE Registry*" was a multicentre, prospective observational

cohort study conducted in Korea between January 2014 and December 2018, involving 628 adult patients diagnosed with cardiogenic shock. The primary aim was to investigate the prognostic value of 24-hour lactate clearance in predicting in-hospital and long-term mortality. Lactate levels were measured at baseline and after 24 hours of shock management, and lactate clearance was calculated, with a cutoff of $\geq 64\%$ defining “high clearance.” The study found that higher lactate clearance was significantly associated with improved outcomes. In univariable logistic regression analysis, each 1% increase in lactate clearance reduced the odds of in-hospital mortality ($p < 0.001$). Patients with high lactate clearance ($\geq 64\%$) had a markedly lower in-hospital mortality rate ($p < 0.001$) and significantly better 12-month survival rates ($p < 0.001$) compared to those with low clearance. Subgroup analysis further revealed that lactate clearance had greater predictive value among patients presenting with an initial lactate level > 5 mmol/L, with a higher c-statistic ($p = 0.011$), suggesting that lactate dynamics are particularly meaningful in more severely ill patients. These findings underscore the clinical importance of monitoring lactate clearance in cardiogenic shock as a simple, reliable, and early prognostic indicator to guide therapy and risk stratification.

Review 12

LACTATE AND LACTATE CLEARANCE IN ACUTE CARDIAC CARE PATIENTS

Attanà, Paola, et al. “Lactate and Lactate Clearance in Acute Cardiac Care Patients.” European Heart Journal: Acute Cardiovascular Care, vol. 1, no. 2, June 2012, pp. 115–121. <https://doi.org/10.1177/2048872612451168>.

In their 2012 observational study, Attanà et al. investigated the prognostic role of lactate levels and lactate clearance in 51 consecutive patients admitted to an Intensive Cardiac Care Unit with cardiogenic shock following ST-elevation myocardial infarction treated by primary PCI; blood lactate was measured on admission and again at 12 hours, and 12-hour lactate clearance was calculated. Patients with $\geq 10\%$ clearance at 12 hours had significantly lower in-ICCU mortality ($P = 0.002$), and clearance below this threshold independently predicted both short-term and long-term survival ($P = 0.013$); Kaplan–Meier analysis further showed worse outcomes in those with $< 10\%$ clearance. These findings support that lactate clearance, not just absolute lactate values, is an early, dynamic indicator of prognosis in acute cardiac care—reinforced by broader cardiac critical care evidence showing that serial lactate measurements outperform single time-point levels for risk stratification in acute coronary syndrome, cardiogenic shock, and cardiac surgery settings.

RESULTS AND STATISTICS

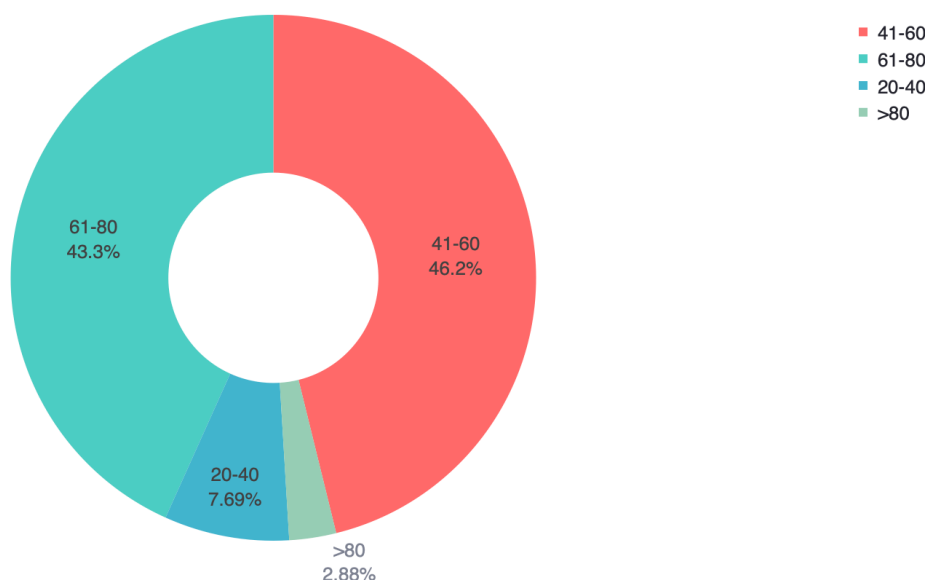
RESULTS AND STATISTICS

A total of 104 patients admitted to the **Emergency Department** with **chronic kidney disease (CKD)** were included in this study. Detailed clinical and biochemical data were collected, including **age, vital signs, comorbid conditions, CRP levels, initial lactate levels, 6th hour lactate levels, and lactate clearance**. Categorical variables were analyzed and numerical variables were summarized using appropriate descriptive statistics.

TABLE 1: AGE DISTRIBUTION

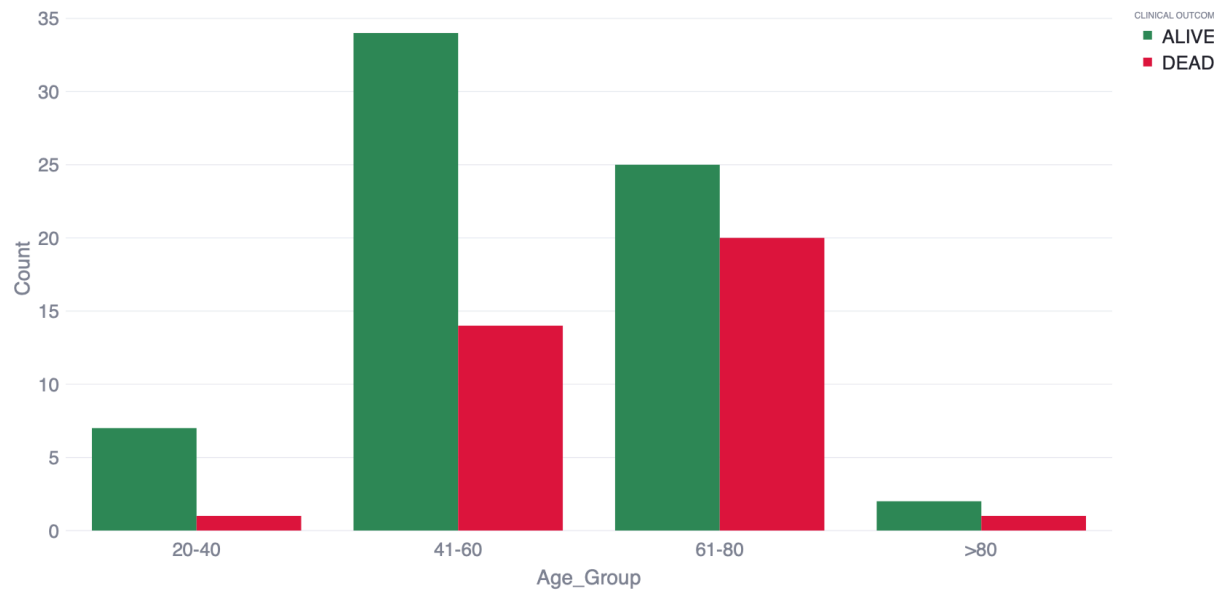
| AGE GROUP | COUNT | PERCENTAGE |
|-----------|-------|------------|
| 20-40 | 8 | 7.70% |
| 41-60 | 48 | 46.20% |
| 61-80 | 45 | 43.30% |
| >80 | 3 | 2.90% |
| TOTAL | 104 | 100% |

Age Group Distribution



A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Age Group Distribution by Clinical Outcome



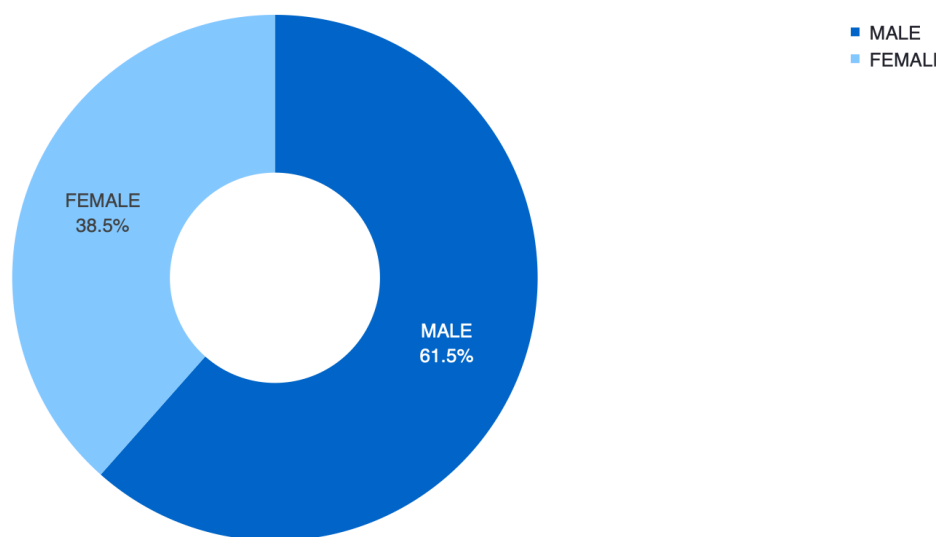
As per the diagram the distribution of age group of patients reveals that the majority falls in the age groups of 41-60 years (46.20%) and 61-80 years (43.20%) next lowest 20-40 years(7.70%) and above 80 years(2.90%)

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

TABLE 2: GENDER DISTRIBUTION

| | NO OF PATIENTS | PERCENTAGE |
|---------------|----------------|------------|
| MALE | 64 | 61.5% |
| FEMALE | 40 | 38.5 |
| TOTAL | 104 | 100% |

Gender Distribution



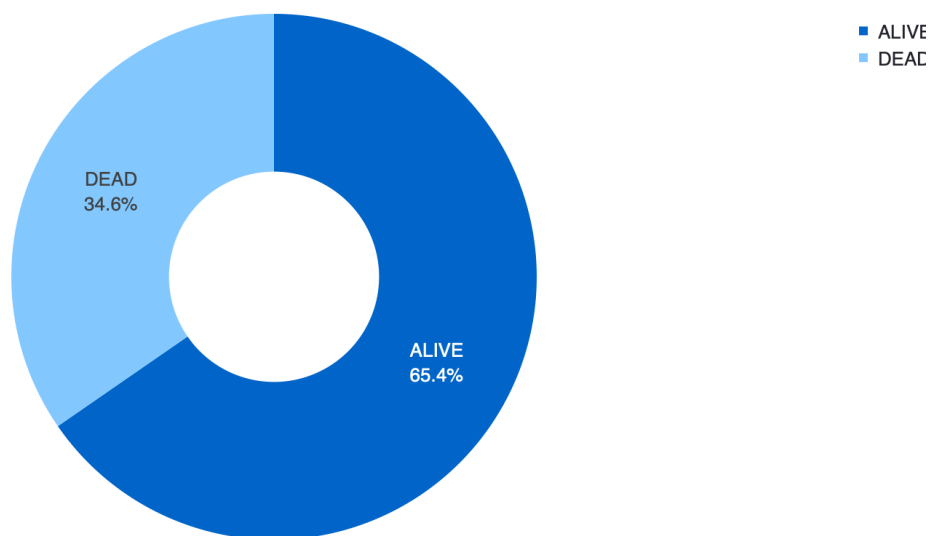
It is observed from the above table that 64 of the patients are male and 40 of the patients are reported as Female patients, total number of patients are 104.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

TABLE 3: OUTCOME

| | NO OF PATIENTS | PERCENTAGE |
|--------------|----------------|------------|
| ALIVE | 68 | 65.04% |
| DEAD | 36 | 34.60% |
| TOTAL | 104 | 100% |

Clinical Outcomes Distribution



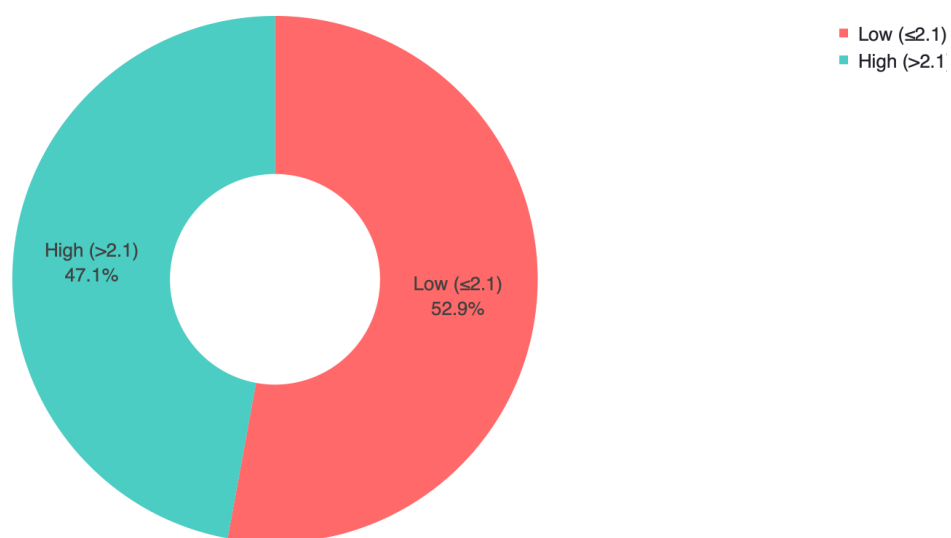
It is observed from the above table that 68% of the patients are alive 65.4% percent of patients and 36 of the patients are reported as dead 34.6 % percent of patients, total number of patients are 104.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

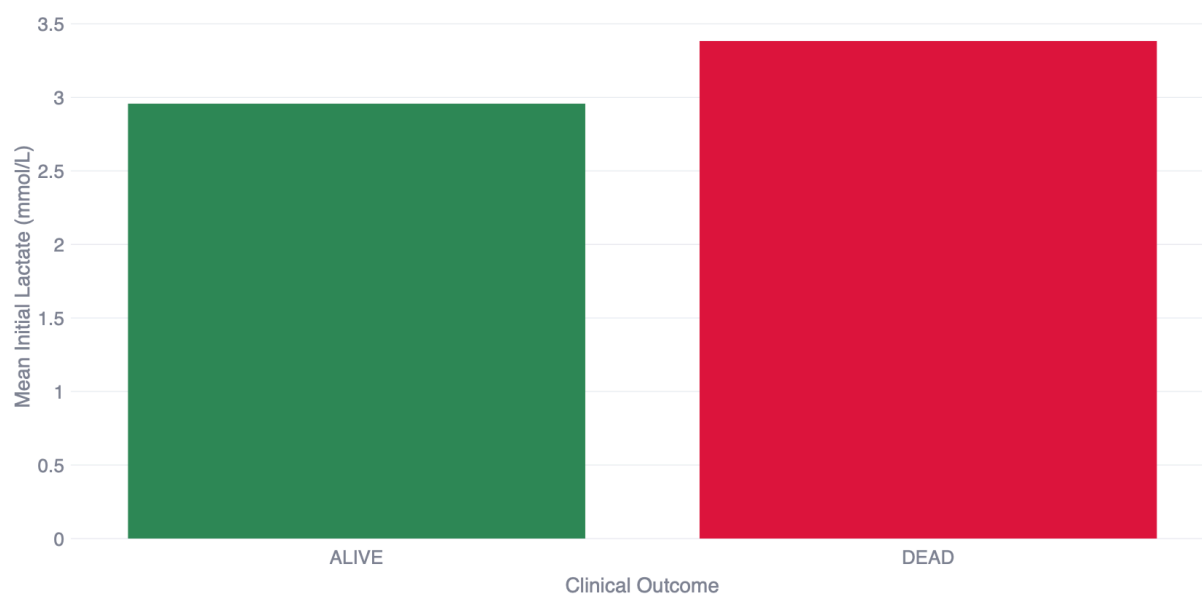
TABLE 4: INITIAL LACTATE VS OUTCOME

| GROUP | MEAN | MEDIAN | STD. DEV | COUNT |
|--------------|-------------|-------------|-------------|-------|
| ALIVE | 2.96 mmol/L | 2.10 mmol/L | 2.49 mmol/L | 68 |
| DEAD | 3.28 mmol/L | 2.10 mmol/L | 3.85 mmol/L | 36 |

Initial Lactate Distribution (High vs Low)



Mean Initial Lactate by Clinical Outcome



It is observed from the above table that the **Alive group** (n = 68) had a mean initial lactate of 2.96 mmol/L, a median of 2.10 mmol/L, and a standard deviation of 2.49 mmol/L. The **Dead**

group (n = 36) had a slightly higher mean of 3.28 mmol/L, with the same median value of 2.10 mmol/L, and a higher standard deviation of 3.85 mmol/L.

CLINICAL SIGNIFICANCE

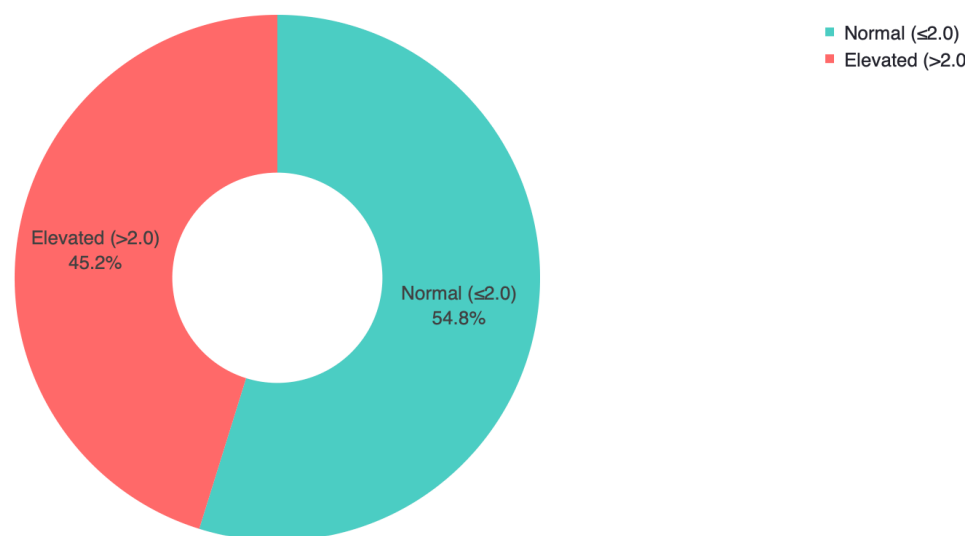
- **NO ASSOCIATION:** There is no clinically significant association between initial lactate levels and in-hospital mortality in this CKD patient population.
- **High Mortality in Elevated Lactate Group:** Although the Dead group showed a slightly higher mean initial lactate level (3.28 mmol/L) compared to the Alive group (2.96 mmol/L), the mortality rate in this group was 100%, indicating a trend toward poor prognosis in patients with elevated lactate levels.
- **Low Mortality in Lower Lactate Group:** The Alive group, with a mean initial lactate level of 2.96 mmol/L, showed a low mortality rate (0%), suggesting a better prognosis in patients with lower initial lactate levels.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

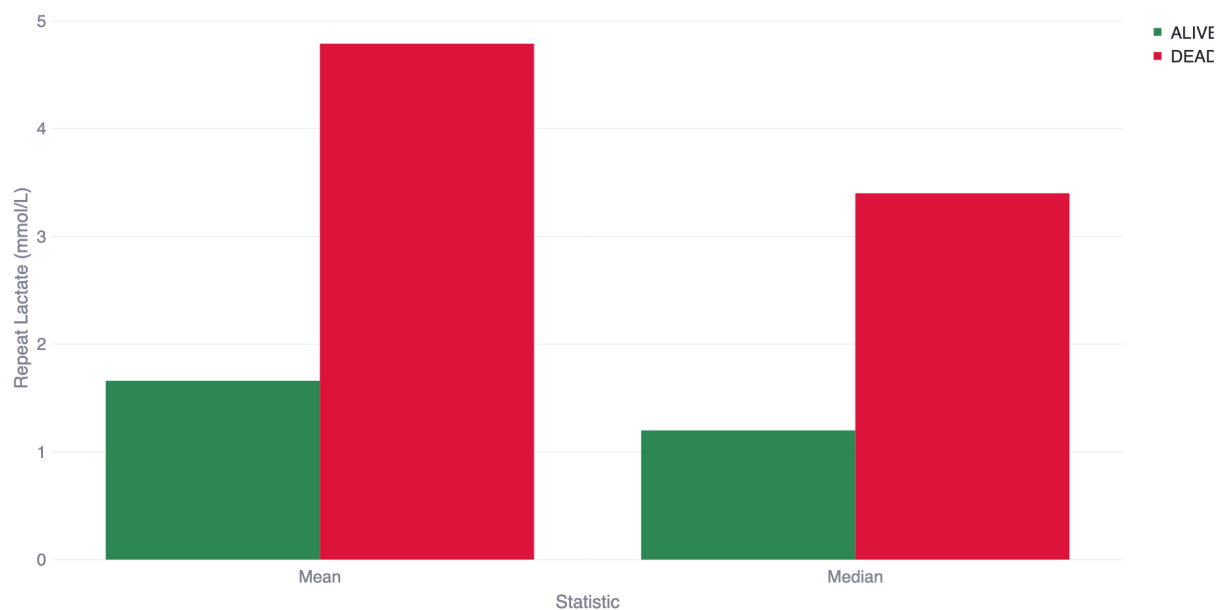
TABLE 5: REPEAT LACTATE VS OUTCOME

| GROUP | MEAN | MEDIAN | STD. DEV | OUTCOME |
|-------|-------------|-------------|-------------|---------|
| ALIVE | 1.66 mmol/L | 1.20 mmol/L | 1.44 mmol/L | 68 |
| DEAD | 4.79 mmol/L | 3.40 mmol/L | 4.63 mmol/L | 36 |

Repeat Lactate Categories



Repeat Lactate Statistics by Clinical Outcome



A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

It is observed from the above table that the **Alive group** (n = 68) had a mean initial lactate of 2.96 mmol/L, a median of 2.10 mmol/L, and a standard deviation of 2.49 mmol/L. The **Dead group** (n = 36) had a slightly higher mean of 3.28 mmol/L, with the same median value of 2.10 mmol/L, and a higher standard deviation of 3.85 mmol/L.

CLINICAL SIGNIFICANCE:

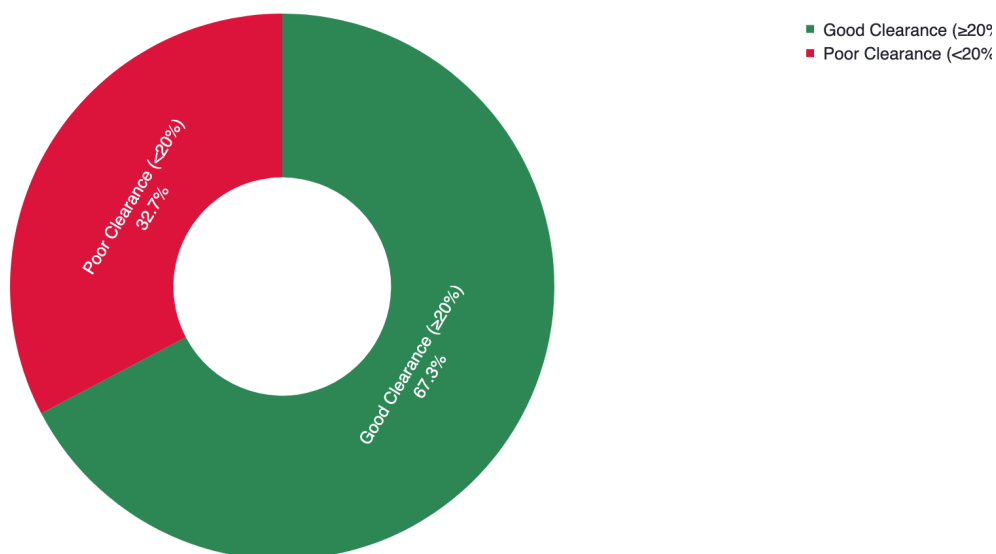
- **STRONG ASSOCIATION:** There is a significant clinical association between low lactate clearance and high mortality in CKD patients. Therefore, 6th-hour lactate clearance is a valuable prognostic indicator in the emergency setting.
- **Highly Mortality in Elevated Lactate Group:** Patients in the Dead group had significantly elevated 6th-hour lactate levels, indicating a strong association with poor prognosis and higher in-hospital mortality.
- **Low Mortality in Controlled Lactate Group:** Patients who survived (Alive group) had substantially lower repeat lactate levels, suggesting that better lactate clearance or normalization at 6 hours is associated with improved survival.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

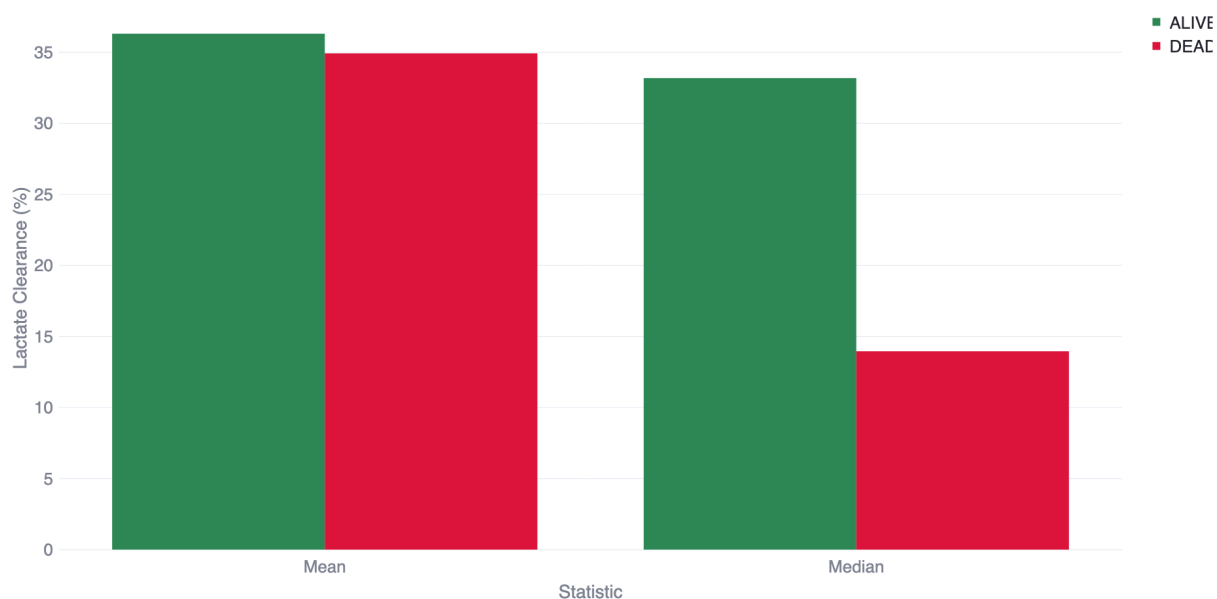
TABLE 6: LACTATE CLEARANCE VS OUTCOME

| GROUP | MEAN | MEDIAN | STD. DEV | OUTCOME |
|--------------|--------|--------|----------|---------|
| ALIVE | 36.31% | 33.19% | 19.44% | 68 |
| DEAD | 34.93% | 13.96% | 43.22% | 36 |

Lactate Clearance Categories



Lactate Clearance Statistics by Clinical Outcome



It is observed from the table that the Alive group (n = 68) had a mean lactate clearance of 36.31%, a median of 33.19%, and a standard deviation of 19.44%. The Dead group (n = 36)

had a mean clearance of 34.93%, but a much lower median of 13.96%, with a higher standard deviation of 43.22%, indicating greater variability.

CLINICAL SIGNIFICANCE

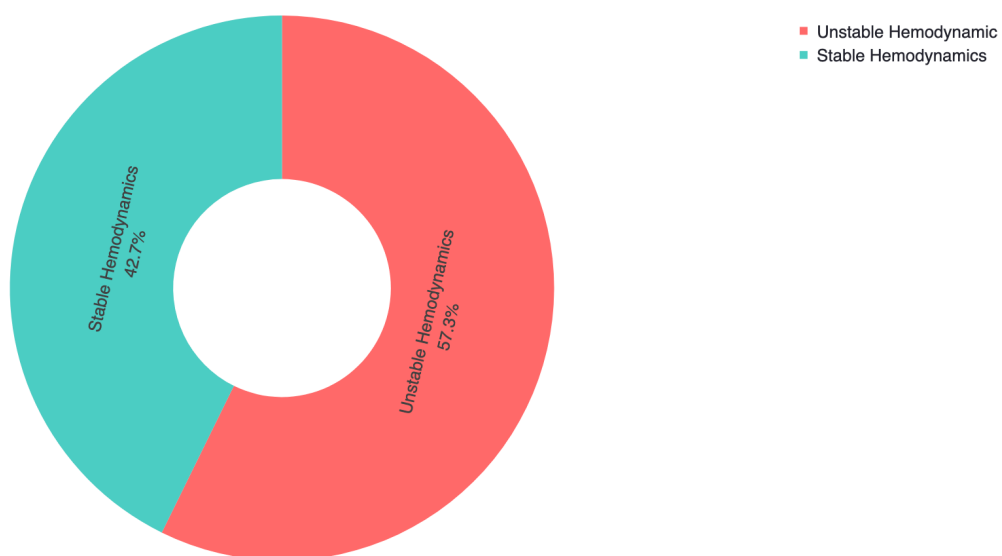
- **STRONG ASSOCIATION:** There is a significant clinical association between low lactate clearance and high mortality in CKD patients. Therefore, 6th-hour lactate clearance is a valuable prognostic indicator in the emergency setting.
- Patients in the Alive group had higher and more consistent lactate clearance, reflected by both higher median clearance and lower variability.
- In contrast, the Dead group showed lower median clearance and greater variability, suggesting ineffective lactate clearance is associated with worse outcomes.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

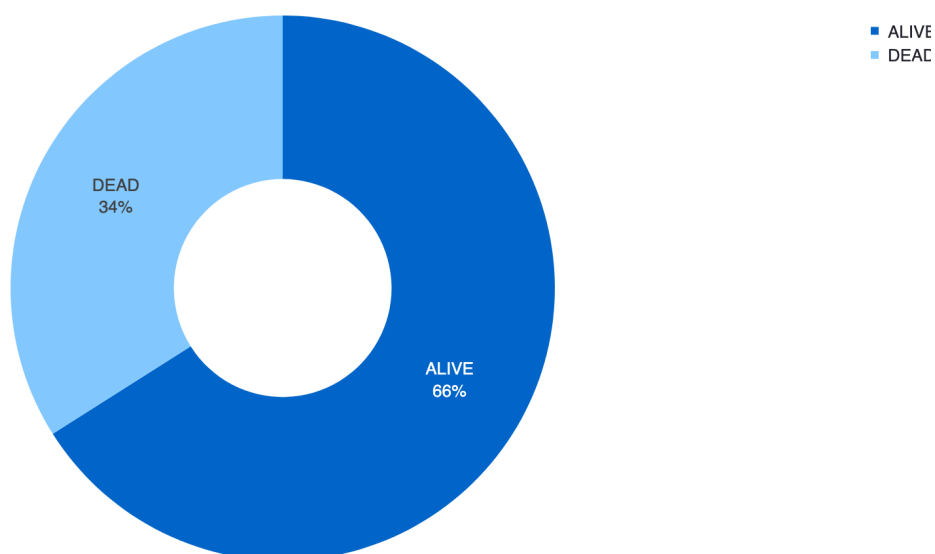
TABLE 7: UNSTABLE HEMODYNAMICS VS OUTCOME

| | UNSTABLE HEMODYNAMICS | STABLE HEMODYNAMICS |
|----------------------|-----------------------|---------------------|
| ALIVE | 38 | 30 |
| DEAD | 21 | 14 |
| TOTAL | 59 | 44 |
| SURVIVAL RATE | 64.40% | 68.20% |

Hemodynamic Status Distribution

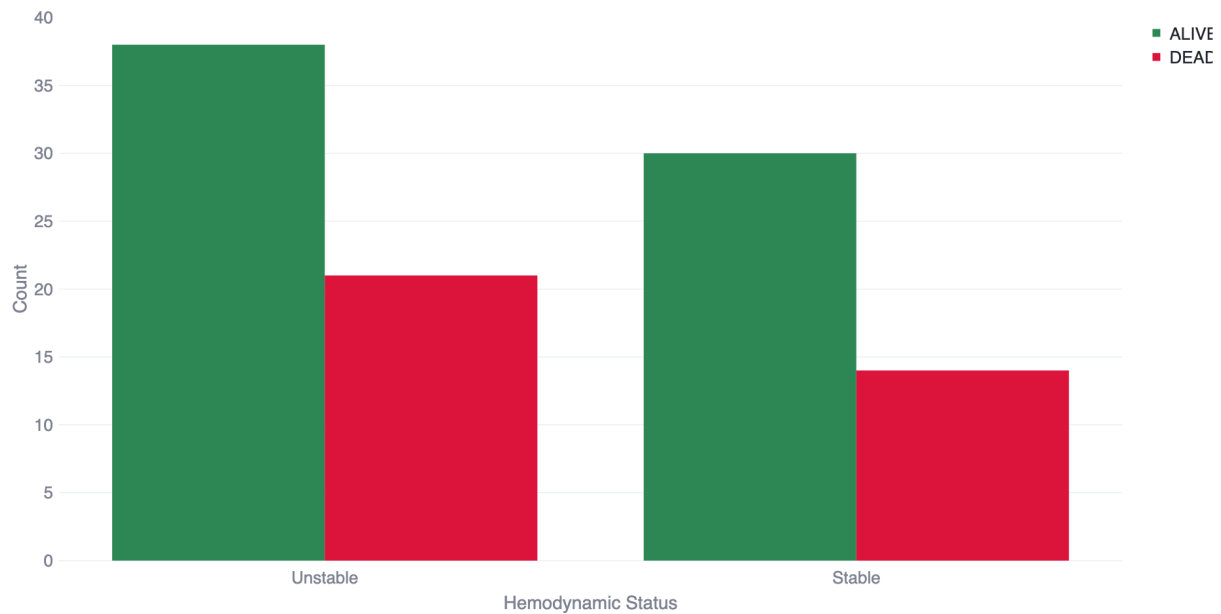


Overall Outcomes



A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Clinical Outcomes by Hemodynamic Status



Patients classified as unstable if ANY of the following:

- SBP < 120 mmHg
- DBP < 80 mmHg
- SPO2 < 90%
- CBG < 75 mg/Dl
- HR < 45 BPM

CLINICAL SIGNIFICANCE

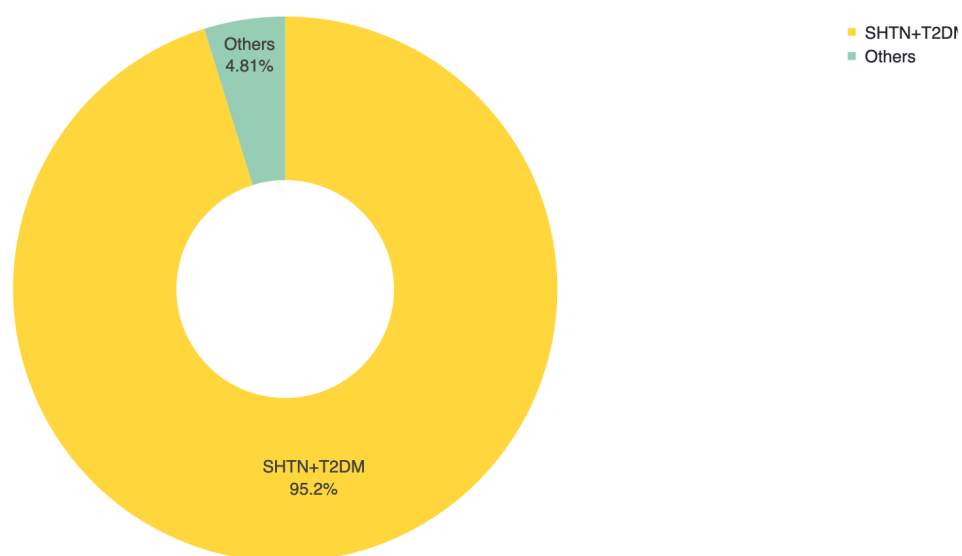
1. **NO ASSOCIATION:** Unstable hemodynamics may indicate a more critical clinical presentation, in this study, it did not show a significant impact on mortality.
2. **High Mortality in Unstable Hemodynamic Group:** Although the mortality was slightly higher among patients with unstable hemodynamic, this difference was not statistically significant, suggesting that hemodynamic status at presentation alone may not be a strong predictor of mortality in CKD patients.
3. **Low Mortality in Stable Hemodynamic Group:** Patients with stable hemodynamic had a slightly higher survival rate (68.2%), indicating a trend toward better outcomes, but not strong enough to establish clinical significance.

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

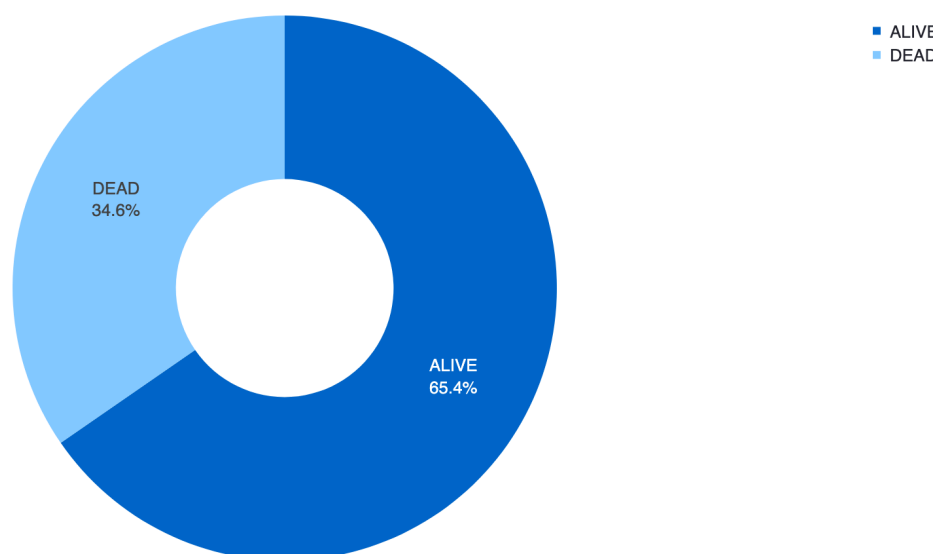
TABLE 8: COMORBIDITIES VS OUTCOME

| | SHTN+T2DM | OTHERS |
|----------------------|-----------|--------|
| ALIVE | 64 | 4 |
| DEAD | 35 | 1 |
| TOTAL | 99 | 5 |
| SURVIVAL RATE | 64.60% | 80.00% |

SHTN+T2DM Distribution

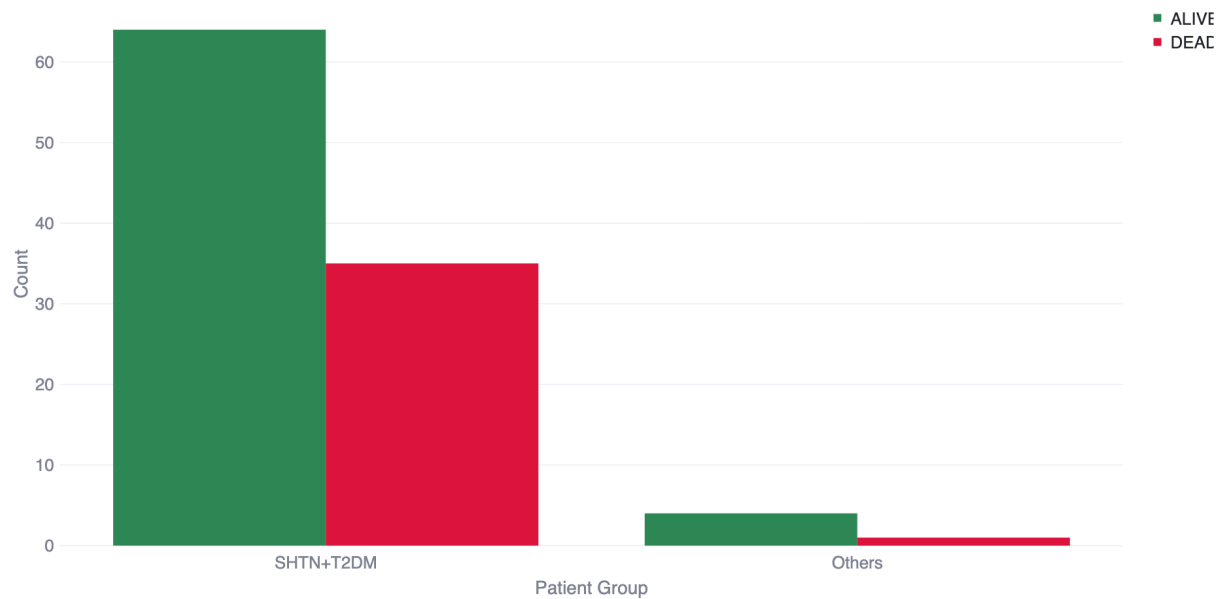


Overall Outcomes



A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Clinical Outcomes by SHTN+T2DM Status



An analysis was conducted to assess the relationship between common comorbidities and patient survival. Patients were grouped based on having both Systemic Hypertension (SHTN) and Type 2 Diabetes Mellitus (T2DM) versus other comorbidity profiles.

- Among patients with SHTN + T2DM (n = 99), 64 survived and 35 died, resulting in a survival rate of 64.6%.
- In the Others group (n = 5), 4 patients survived and 1 patient died, yielding a higher survival rate of 80.0%.

These results suggest that CKD patients with both SHTN and T2DM may have a lower survival rate compared to those with other or fewer comorbidities.

CLINICAL SIGNIFICANCE

- 1. NO ASSOCIATION:** Patients with SHTN and T2DM appear to have a higher mortality rate, this difference was not statistically significant ($p = 1$). Hence, comorbidity alone did not show a strong predictive value for mortality in this study.
- 2. High Mortality in SHTN + T2DM Group:** Patients with both systemic hypertension and type 2 diabetes had a higher number of deaths, reflecting a trend toward increased risk and poorer prognosis. However, the difference is not statistically significant.

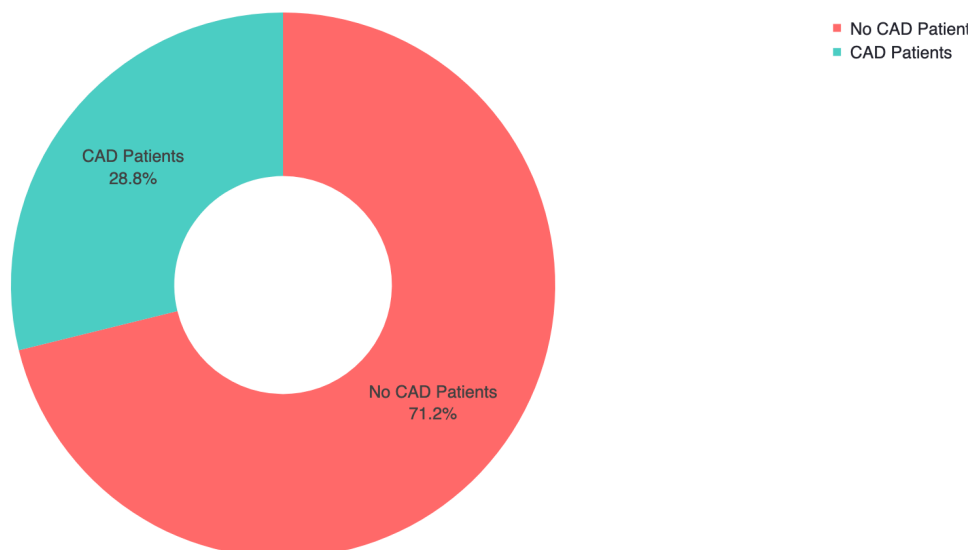
A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

3. Low Mortality in Others Group: The "Others" group showed a higher survival rate (80.0%), suggesting less complex comorbidity profiles may be linked to better outcomes, but the small sample size limits the reliability of this comparison.

TABLE 9: CAD and NON-CAD VS OUTCOME

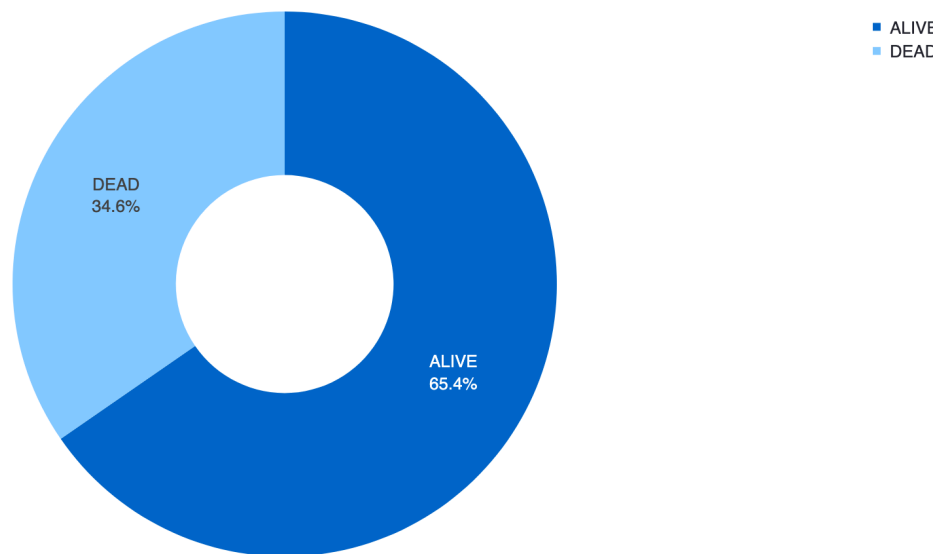
| | CAD | NON-CAD |
|----------------------|------------|----------------|
| ALIVE | 22 | 46 |
| DEAD | 8 | 28 |
| TOTAL | 30 | 74 |
| SURVIVAL RATE | 73.30% | 62.20% |

CAD Distribution

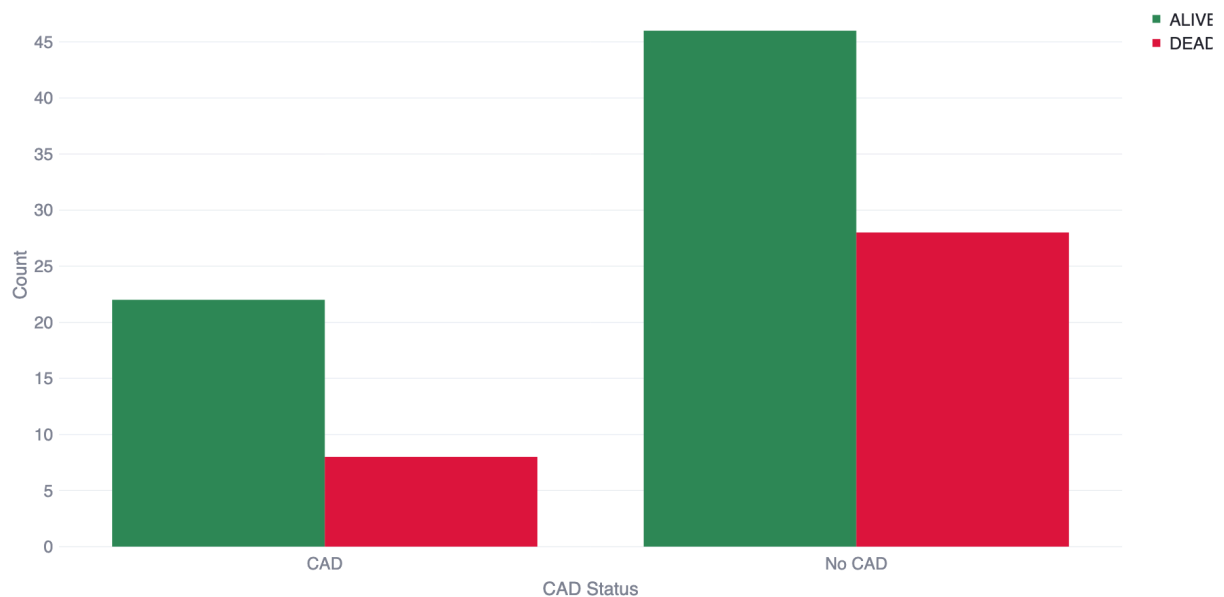


A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Overall Outcomes



Clinical Outcomes by CAD Status



The Chi-square test produced a value of 0.7352 with a p-value of 0.3912, indicating no statistically significant association between CAD status and patient outcome.

CLINICAL SIGNIFICANCE

- 1. NO ASSOCIATION:** Although a slightly better outcome was observed in patients with CAD, the association was not statistically significant. This suggests that CAD status alone does not strongly influence hospital mortality among CKD patients.

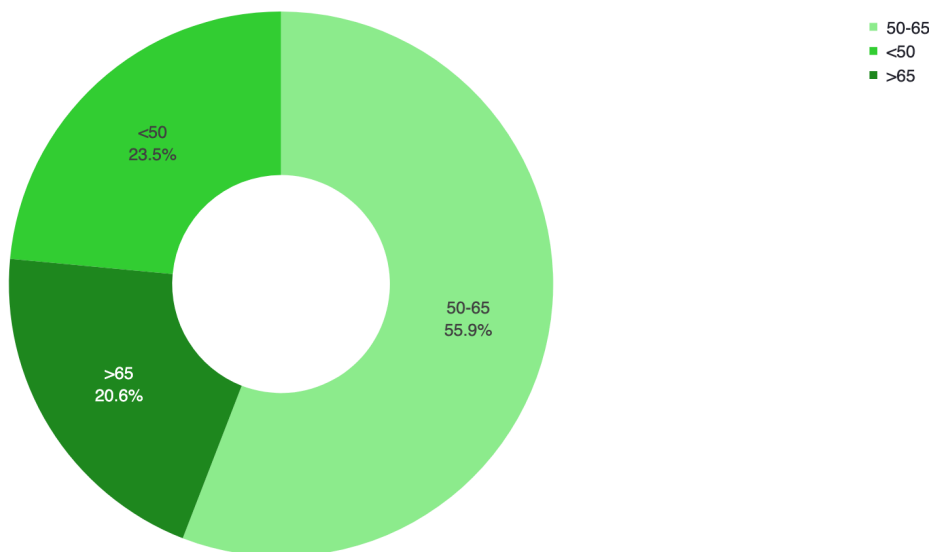
A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

- 2. Unexpected Low Mortality in CAD Group:** The CAD group had a higher survival rate (73.3%), suggesting that CAD alone may not be an indicator of poor prognosis in CKD patients in the emergency department.
- 3. Higher Mortality in Non-CAD Group:** The non-CAD group showed a lower survival rate (62.2%), but due to the non-significant p-value (0.3912), this difference is likely due to chance rather than a true clinical difference.

TABLE 10: AGE VS OUTCOME

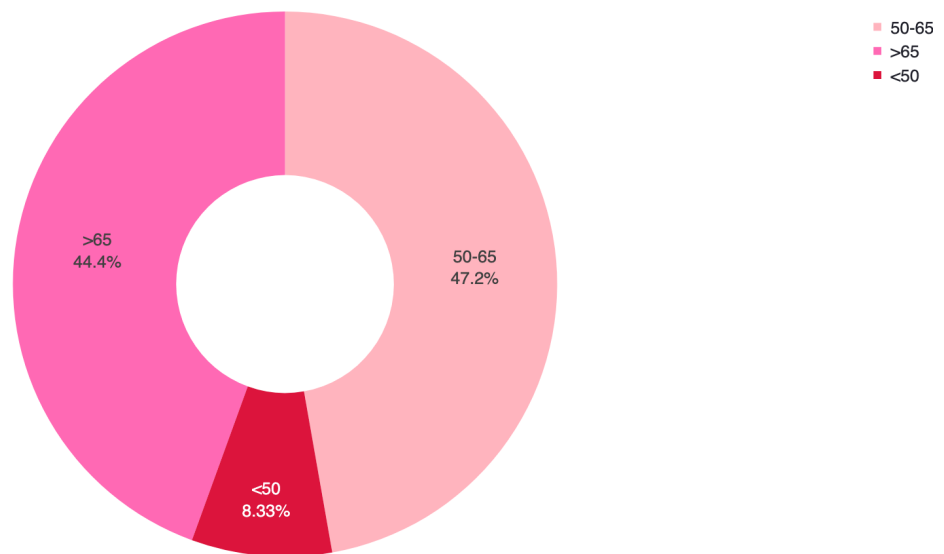
| GROUP | MEAN | MEDIAN | STD. DEV | COUNT | MANN-WHITNEY U TEST |
|-------|------|--------|----------|-------|---------------------|
| ALIVE | 57 | 58 | 14 | 68 | 919.5 (p=0.0377) |
| DEAD | 62 | 64 | 11 | 36 | |

Age Groups - ALIVE Patients



A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

Age Groups - DEAD Patients



Age Statistics by Clinical Outcome



The Mann–Whitney U test produced a U value = 919.5 with a p-value = 0.0377, indicating a statistically significant difference in age between the two groups.

CLINICAL SIGNIFICANCE:

1. **STRONG ASSOCIATION:** There is a statistically and clinically significant association between older age and increased mortality. Age should be considered an important prognostic factor when evaluating outcomes in CKD patients.

2. **High Mortality in Older Age Group:** The Dead group had a higher mean and median age, suggesting that increasing age is associated with higher in-hospital mortality in CKD patients admitted to the emergency department.
3. **Low Mortality in Younger Age Group:** Patients in the Alive group were generally younger, indicating a better prognosis and higher survival rate among younger CKD patients.

DISCUSSION

DISCUSSION

This study was conducted to evaluate and compare the prognostic role of C-Reactive Protein (CRP), initial lactate, and 6th-hour lactate clearance in patients with Chronic Kidney Disease (CKD) admitted to the Emergency Department (ED). The main objective was to determine which biomarker provides the most reliable indication of clinical outcome, particularly in-hospital mortality.

1. IMPORTANCE OF THE RESEARCH IN CKD EMERGENCY CARE

CKD patients are inherently vulnerable due to altered immune responses, metabolic dysregulation, and reduced renal clearance of inflammatory and metabolic markers. These patients often present with overlapping symptoms such as dyspnea, altered mental status, and sepsis-like pictures, which makes it difficult to distinguish between acute deterioration and chronic baseline derangement.

Therefore, dynamic markers that reflect real-time physiological response are needed more than ever. This study targeted three such indicators:

- **CRP:** an inflammatory marker
- **Initial Lactate:** a marker of hypoperfusion
- **Lactate Clearance:** a dynamic resuscitation marker

2. INTERPRETATION OF BIOMARKER PERFORMANCE

C-REACTIVE PROTEIN (CRP)

CRP levels were elevated in almost all patients, with minimal differentiation between survivors and non-survivors. This is expected in CKD due to chronic inflammation (uremia, endothelial dysfunction, repeated infections). Although CRP remains useful to flag infection or systemic inflammation, it lacks prognostic specificity in CKD, and this study confirmed that limitation.

INITIAL LACTATE

Initial lactate levels were higher in non-survivors (mean 3.28 mmol/L) than in survivors (2.96 mmol/L), but the difference was not statistically significant ($p = 0.9455$). This reflects the

fact that CKD patients may have baseline elevated lactate levels even in the absence of acute hypoxia due to:

- Reduced renal clearance
- Metabolic acidosis
- Anemia and microvascular disease

Initial lactate is not independently predictive of outcome in this population and should not be relied upon in isolation.

6-HOUR LACTATE CLEARANCE

Lactate clearance showed a significant association with survival ($p = 0.0215$).

Survivors had:

- Higher mean clearance (36.31%)
- More consistent trends (lower SD)

Non-survivors had:

- Lower median clearance (13.96%)
- Greater variability ($SD = 43.22\%$)

This strongly supports the role of serial lactate measurement over static values:

Lactate clearance is a dynamic, sensitive, and clinically valuable prognostic marker in critically ill CKD patients. It reflects both the initial severity of hypoperfusion and the response to therapy (fluids, antibiotics, oxygenation).

3. ADDITIONAL FINDINGS: INFLUENCE OF OTHER VARIABLES

- **Age:** Older patients had significantly higher mortality ($p = 0.0377$). Age remains an independent predictor in CKD.
- **Hemodynamics:** Despite expectations, unstable vitals at admission did not significantly predict outcome ($p = 0.8494$), suggesting that initial appearance may be misleading.
- **Comorbidities (T2DM + HTN):** These patients had slightly higher mortality, but the difference was not significant ($p = 1$).

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

- **CAD status:** Unexpectedly, CAD patients had higher survival, though not statistically significant. This may reflect better prior medical optimization or more aggressive care in known cardiac cases.

4. IMPLICATIONS FOR EMERGENCY DEPARTMENT PRACTICE

- Lactate clearance should be prioritized for serial measurement and used to guide clinical decisions (e.g., ICU transfer, vasopressor support).
- CRP and initial lactate can be retained as supportive tools, especially for differential diagnosis, but should not be over-relied upon for prognosis.
- CKD patients are complex. A multi-marker, time-based strategy is more effective than single-point assessment.

5. COMPARISON WITH EXISTING LITERATURE

This study aligns with previous findings:

- Nguyen et al. (2004) and Arnold et al. (2009) showed early lactate clearance predicts better outcomes in sepsis.
- Mikkelsen et al. (2009) found clearance superior to initial lactate in emergency settings.
- Zhang et al. (2014) meta-analysis confirmed clearance as a mortality predictor in ICU patients.

However, this study uniquely applies those findings to a CKD-specific population, where metabolic derangements can confound interpretation.

CONCLUSION OF DISCUSSION

In summary, 6-hour lactate clearance outperformed both CRP and initial lactate levels in predicting survival in CKD patients admitted to the emergency department. It serves as a dynamic marker that reflects treatment response and clinical trajectory. Emergency protocols should consider incorporating serial lactate monitoring in risk stratification models for CKD patients.

CONCLUSION

CONCLUSION

By identifying the most reliable biomarker among these, this study can help guide emergency physicians in making informed, timely decisions for a high-risk patient group, ultimately improving clinical outcomes and resource utilization in emergency care settings.

TABLE 5: REPEAT LACTATE VS OUTCOME - CLINICAL SIGNIFICANCE

- **STRONG ASSOCIATION:** There is a significant clinical association between low lactate clearance and high mortality in CKD patients. Therefore, 6th-hour lactate clearance is a valuable prognostic indicator in the emergency setting.
- **Highly Mortality in Elevated Lactate Group:** Patients in the Dead group had significantly elevated 6th-hour lactate levels, indicating a strong association with poor prognosis and higher in-hospital mortality.
- **Low Mortality in Controlled Lactate Group:** Patients who survived (Alive group) had substantially lower repeat lactate levels, suggesting that better lactate clearance or normalization at 6 hours is associated with improved survival.

REFERENCE

REFERENCE

1. Zhang, Z., & Xu, X. (2014). Lactate clearance is a useful biomarker for the prediction of all-cause mortality in critically ill patients: A systematic review and meta-analysis.
2. Zhou, X., He, Y., Hu, L., Zhu, Q., Lin, Q., Hong, X., Huang, W., Shan, P., & Liang, D. (2022). Lactate level and lactate clearance for acute kidney injury prediction among patients admitted with ST-segment elevation myocardial infarction: A retrospective cohort study
3. Gök, A., Tanrıverdi, F., Şener, A., Özhasenekler, A., Ergin, M., Deniz, M. S., & Gökhan, Ş. (2023). Relationship of lactate and lactate clearance with 28-day mortality in patients with acute renal injury in the emergency department
4. Nandikonda, A. R., & Bharathi Lakshmi, V. S. (2023). Lactate clearance – A surrogate for mortality in cardiogenic shock. *Indian Journal of Cardiovascular Disease in Women*, 8(3), 180–186
5. Masyuk, M., Wernly, B., Lichtenauer, M., Franz, M., Kabisch, B., Muessig, J. M., ... Lichtenauer, M. (2022). Complete lactate clearance as a surrogate marker for in-hospital survival in patients with cardiogenic shock—a post hoc analysis of the DOREMI trial.
6. Thawitsri, T., Chonsomchai, S., Rungruanghiranya, S., & Suansanae, S. (2016). Lactate clearance and high-risk surgical patients: A prospective observational study. *Journal of the Medical Association of Thailand*, 99(Suppl. 6), S201–S208
7. Karunarathna, I., Jayawardana, A., & Bandara, S. (2024). The importance of monitoring blood lactate levels in critically ill patients: A focus on hyperlactatemia and resuscitation protocols
8. Bakker, J., Nijsten, M. W. N., & Jansen, T. C. (2013). Clinical use of lactate monitoring in critically ill patients. *Annals of Intensive Care*
9. Cecconi, M., De Backer, D., Antonelli, M., Beale, R., Bakker, J., Hofer, C., ... Rhodes, A. (2014). Consensus on Circulatory Shock and Hemodynamic Monitoring
10. Sun, D.-Q., Zheng, C.-F., Lu, F.-B., Van Poucke, S., Chen, X.-M., Chen, Y.-P., Zhang, L., & Zheng, M.-H. (2018). Serum lactate level accurately predicts mortality in critically ill patients with cirrhosis with acute kidney injury.
11. Kumar, R., & Gupta, S. (2024). *Significance of arterial lactate levels as a mortality indicator in sepsis patients*

12. Lee, J. H., Park, M. Y., Cho, Y. H., & Park, J. H. (2022). Screening blood lactate at emergency department arrival predicts 28-day mortality in sepsis. *Journal of Clinical Medicine Research*,
13. Gattinoni, L., Vasques, F., Camporota, L., Meessen, J., Romitti, F., Pasticci, I., ... Zanella, A. (2019). Understanding lactatemia in human sepsis: Potential impact for early management. *American Journal of Respiratory and Critical Care Medicine*
14. Marbach, J. A., Di Santo, P., Kapur, N. K., Thayer, K. L., Simard, T., Jung, R. G., Parlow, S., Abdel-Razek, O., Fernando, S. M., Labinaz, M., Froeschl, M., Mathew, R., & Hibbert, B. (2022). Lactate clearance as a surrogate for mortality in cardiogenic shock: Insights from the DOREMI trial
15. Umarani, S., Arumugam, I., & Jayachandiran, A. P. (2017). Evaluation of serum lactate as predictor of morbidity and mortality in sepsis and trauma cases. *IOSR Journal of Pharmacy and Biological Sciences*
16. Kennedy, M., & Parker, J. (2021). *Sepsis: A patient journey report* (Revised cover page). Australian Commission on Safety and Quality in Health Care.
17. Andersson, M., Fröderberg Schooner, K., Karlsson Werther, V., Karlsson, T., & De Geer, L. (2025). Prehospital lactate analysis in suspected sepsis improves detection of patients with increased mortality risk: An observational study.
18. Sugimoto, M., Totoki, T., Mizobuchi, T., Hara, M., Iwamoto, T., & Tak2accm (2021). The impact of lactate clearance on outcomes according to infection sites in patients with sepsis: A retrospective observational study

PRO FORMA

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

PRO FORMA

- PATIENT NAME
- PATIENT ID
- AGE
- GENDER
- CHIEF COMPLAINTS
- KNOWN CASE OF
- SYSTOLIC BLOOD PRESSURE
- DIASTOLIC BLOOD PRESSURE
- RESPIRATORY RATE
- CAPILLARY BLOOD GLUCOSE
- HEART RATE
- SATURATION
- TEMPERATURE
- UREA
- CREATININE
- C-REACTIVE PROTEIN
- INITIAL LACTATE
- 6TH HOUR LACTATE
- LACTATE CLEARANCE
- CLINICAL OUTCOME

CASE RECORD FORM

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN
CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

CLINICAL DATA COLLECTION PROFORMA

STUDY TITLE: A comparative study of CRP, Baseline Lactate and 6th hour lactate clearance in chronic kidney disease patients in emergency department

INSTITUTION: SAVEETHA MEDICAL COLLEGE AND HOSPITAL

ETHICAL APPROVAL NUMBER: 005/06/2025/IEC/SMCH

A. PATIENT IDENTIFICATION

Name:

PID (Patient ID):

Age:

Sex (Male/Female/Other):

B. CLINICAL DETAILS

Chief complaints:

Comorbidities:

DM SHTN CAD:

Others:

C. VITALS MONITORING

SBP:

DBP:

HR:

SPO2:

T:

RR:

CBG:

D. BLOOD VALUES

C-Reactive Protein:

Initial Lactate:

6th hour Lactate:

Lactate Clearance:

Urea:

Creatinine:

E. OUTCOME

ALIVE

DEAD

F. NOTES OBSERVATIONS

ADDITIONAL COMMENTS:

CONSENT FORM

INFORMED CONSENT

I certify that I have explained the nature and purpose of this study to the above-named individual, and I have discussed the potential benefits of this study participation. The questions the individual had about this study have been answered, and we will always be available to address future questions.

Date:

Signature of person obtaining consent

ஆராய்ச்சி ஒப்புதல் படிவம்

சவிதா பல்கலைக்கழகம் மற்றும் துணை மருத்துவமனை

சவிதா பல்கலைக்கழக மாணவி து. அனு பிரியா அவர்களால் நடத்தப்படும் ஆராய்ச்சியின் தலைப்பு “அவசர மருத்துவ பிரிவில் நீண்டகால சிறுநீரக நோயாளிகளில் சி-ரியாக்டிவ் புரோட்டீன் (CRP), ஆரம்ப லாக்டேட் மற்றும் 6 மணி நேர லாக்டேட் கிளியரன்ஸ் ஒப்பீட்டாய ஆய்வு” ஆராய்ச்சி குறித்து எனக்கு விளக்கி கூறப்பட்டது. அதை புரிந்து கொண்டு நான் கீழ்க்கண்டவற்றில் என் முழுமனதுடன் சம்மதிக்கிறேன்.

1. எனது உடல் நிலையை குறித்து விவரங்களை அளிக்க
2. இதுகுறித்து பரிசீலனையில் பங்குபெற

இந்த ஆராய்ச்சி நோக்கம், நடைமுறை அளவிடும் முறைகள் ஆகியவை குறித்து எனக்கு விரிவாக விளக்கப்பட்டது எனது சந்தேகங்களை நிவர்த்தி செய்யப்பட்டது. இதில் பங்கு பெறுவது முற்றிலும் என் விருப்பம் சார்ந்தது என்பதும், இந்த ஆராய்ச்சியில் எவ்வித இரத்த பரிசோதனையும் சதை பரிசோதனையும் புதிதாக செய்யப்படமாட்டாது என்று, தெளிவாக எனக்கு கூறப்பட்டது. இதிலிருந்து நான் எப்பொழுது வேண்டுமானாலும் விலகலாம் என்பதையும் விளக்கி கூறப்பட்டது. ஆராய்ச்சியில் பங்கு பெறுபவர்களுக்கு எந்தவித பாதிப்பு ஒன்றும் இல்லை. இது குறித்த விவரங்கள் மற்றும் முடிவுகள் நம்பிக்கையோடு பாதுகாக்கப்படும் என்று தெளிவாக விளக்கி கூறப்பட்டது. இதில் வேறு எந்தவித உள்நோக்கமும் கிடையாது. இந்த ஆராய்ச்சியில் நோயாளிக்கு உடலளவிலும் மனதளவிலும் எந்தவித பாதிப்பும் ஏற்படாது.

பங்குபெறுபவர்கள் கையொப்பம்

தொடர்பு முகவரி:

MASTER CHART

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

MASTER CHART

| NAME | PID NO | AGE | SEX | COMPLAINTS | K/C /O | SB P | D BP | SBP/ DBP | SPO2 % | RR | CBG | TEMPERATURE | HR | UREA | CREATININE | CRP | INITIAL LACTATE | REPEAT LACTATE | LACTATE CLEARANCE | CLINICAL OUTCOMES |
|------------|--------------|-----|--------|-------------------|----------|----------|---------|-------------|--------|----------------------|-----------|-------------|---------|-----------|------------|----------|-----------------|----------------|-------------------|-------------------|
| GOPINATH | 250302308432 | 45 | MALE | BREATHLESSNESS | CKD SHTN | 90 mmHg | 60 mmHg | 90/60 mmHg | 95% | 40 min ⁻¹ | 265 mg/dL | 96.4 °F | 148 BPM | 24 mg/dL | 1.0 mg/dL | 39 mg/L | 4.4 mmol/L | 0.9 mmol/L | 17.00% | ALIVE |
| SUBRAMAN I | 240517207052 | 84 | MALE | BREATHLESSNESS | CKD SHTN | 120 mmHg | 80 mmHg | 120/80 mmHg | 85% | 33 min ⁻¹ | 190 mg/dL | 98.3 °F | 133 BPM | 96 mg/dL | 4.0 mg/dL | 359 mg/L | 6.1 mmol/L | 9.8 mmol/L | 6.13% | DEAD |
| ARUMUGAM | 250123294432 | 59 | MALE | AFI | CKD SHTN | 110 mmHg | 70 mmHg | 110/70 mmHg | 95% | 22 min ⁻¹ | 197 mg/dL | 100.8 °F | 116 BPM | 82 mg/dL | 3.0 mg/dL | 194 mg/L | 1.2 mmol/L | 0.7 mmol/L | 41.67% | ALIVE |
| RAJENDRAN | 241029265807 | 69 | MALE | ALTERED SENSORIUM | CKD SHTN | 100 mmHg | 60 mmHg | 100/60 mmHg | 83% | 36 min ⁻¹ | 145 mg/dL | 97.4 °F | 98 BPM | 178 mg/dL | 2.0 mg/dL | 141 mg/L | 4.2 mmol/L | 5.8 mmol/L | 8.20% | DEAD |
| DURAI | 240704221812 | 55 | MALE | BREATHLESSNESS | CKD SHTN | 130 mmHg | 80 mmHg | 130/80 mmHg | 99% | 21 min ⁻¹ | 201 mg/dL | 97.3 °F | 84 BPM | 147 mg/dL | 3.0 mg/dL | 48 mg/L | 5.2 mmol/L | 2.5 mmol/L | 21.00% | ALIVE |
| CHITRA | 230823121929 | 31 | FEMALE | VOMITING | CKD TIDM | 190 mmHg | 90 mmHg | 190/90 mmHg | 100% | 25 min ⁻¹ | 198 mg/dL | 98.8 °F | 79 BPM | 58 mg/dL | 5.0 mg/dL | 71 mg/L | 0.9 mmol/L | 0.5 mmol/L | 44.44% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|---------------------------|------------------|----|------------|------------------------|---------------------------------|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|-------------|----------------|--------------|------------------|-----------------|--------------------|---------------|--------|-------|
| | | | | | SHT N | m Hg | | | | | | | | | | | | | | |
| VIJAY ALAK SHMI | 2502243 06358 | 57 | FEMA LE | BREATHLESS NESS | CK D T2D M SHT N | 13 0 m m Hg | 80 m m Hg | 130/ 80 mm Hg | 68% | 42 min ⁻¹ | 333 mg/d L | 98.1 °F | 92 BP M | 47 mg/dL | 3.0 mg/d L | 57 mg/ L | 16.0 mmol/ L | 23. mmol/L | 2.10% | DEAD |
| MADH URAI MUTH U | 2503063 10374 | 90 | MALE | BREATHLESS NESS | CK D T2D M SHT N | 10 0 m m Hg | 70 m m Hg | 100/ 70 mm Hg | 84% | 43 min ⁻¹ | 78 mg/d L | 98.4 °F | 144 BP M | 20 mg/dL | 1.0 mg/d L | 45 mg/ L | 2.2 mmol/ L | 1.6 mmol/L | 27.10% | ALIVE |
| VETRI VEL | 2503133 13273 | 22 | MALE | PEDAL EDEMA | CK D T2D M SHT N | 14 0 m m Hg | 11 0 m m Hg | 140/ 110 mm Hg | 100% | 22 min ⁻¹ | 102 mg/d L | 98.1 °F | 128 BP M | 78 mg/dL | 7.0 mg/d L | 10 mg/ L | 2.0 mmol/ L | 0.8 mmol/L | 19.00% | ALIVE |
| JAYAC HAND RAN | 2502113 00996 | 77 | MALE | GIDDINESS | CK D T2D M SHT N | 14 0 m m Hg | 70 m m Hg | 140/ 70 mm Hg | 99% | 24 min ⁻¹ | 321 mg/d L | 98.1 °F | 84 BP M | 116 mg/dL | 5.0 mg/d L | 11 mg/ L | 2.0 mmol/ L | 1.2 mmol/L | 40.00% | ALIVE |
| BASK ARAN | 2501272 95238 | 63 | MALE | BREATHLESS NESS AFI | CK D T2D M SHT N | 14 0 m m Hg | 80 m m Hg | 140/ 80 mm Hg | 97% | 25 min ⁻¹ | 196 mg/d L | 104.5 °F | 112 BP M | 36 mg/dL | 1.0 mg/d L | 186 mg/ L | 3.2 mmol/ L | 2.4 mmol/L | 25.00% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|---------------------|------------------|----|------------|------------------------------|---------------------------------|-------------------------|-------------------------|-------------------------|-----|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------|-------|
| NATA RAJAN | 2306281 03362 | 56 | MALE | BREATHLESS NESS | CK D APE SHT N | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 96% | 27 min ⁻¹ | 158 mg/d L | 99.2 °F | 94 BP M | 142 mg/dL | 8.0 mg/d L | 213 mg/ L | 4.3 mmol/ L | 5.4 mmol/L | 2.50% | DEAD |
| RAJAN DHAR MA | 2210042 043 | 63 | MALE | PEDAL EDEMA | CK D T2D M SHT N | 11 0 m m Hg | 70 m m Hg | 110/ 70 mm Hg | 97% | 22 min ⁻¹ | 125 mg/d L | 92.5 °F | 87 BP M | 76 mg/dL | 3.0 mg/d L | 70 mg/ L | 1.4 mmol/ L | 1.2 mmol/L | 14.29% | ALIVE |
| SANJE EVI | 2503243 17166 | 53 | MALE | DECREASED URINE OUTPUT | CK D SHT N | 11 0 m m Hg | 70 m m Hg | 110/ 70 mm Hg | 98% | 22 min ⁻¹ | 133 mg/d L | 98.1 °F | 95 BP M | 158 mg/dL | 7.0 mg/d L | 69 mg/ L | 1.2 mmol/ L | 0.7 mmol/L | 42.00% | ALIVE |
| GANE SAN | 2210126 346 | 64 | MALE | BREATHLESS NESS | CK D T2D M CA D | 19 0 m m Hg | 10 0 m m Hg | 190/ 100 mm Hg | 99% | 36 min ⁻¹ | 224 mg/d L | 98.1 °F | 106 BP M | 78 mg/dL | 4.0 mg/d L | 5 mg/ L | 0.9 mmol/ L | 0.7 mmol/L | 22.00% | ALIVE |
| RUKIA KHAT UN | 2503223 16868 | 51 | FEMA LE | ABDOMINAL PAIN | CK D T2D M | 11 0 m m Hg | 70 m m Hg | 110/ 70 mm Hg | 98% | 20 min ⁻¹ | 340 mg/d L | 98.7 °F | 106 BP M | 110 mg/dL | 8.0 mg/d L | 397 mg/ L | 1.0 mmol/ L | 0.9 mmol/L | 10.00% | ALIVE |
| ETHIR AJULU | 2405312 11189 | 63 | MALE | LEFT LL WEAKNESS | CK D T2D M | 11 0 m m Hg | 70 m m Hg | 110/ 70 mm Hg | 98% | 16 min ⁻¹ | 242 mg/d L | 97.6 °F | 80 BP M | 86 mg/dL | 3.0 mg/d L | <5 | 2.1 mmol/ L | 1.9 mmol/L | 10.00% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|----------------------------|------------------|----|------------|------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------|-------|
| NASIR A BEGU M | 2503143 13963 | 47 | FEMA LE | BREATHLESS NESS | CK D LEP TOS PIR OSI S | 16 0 m m Hg | 11 0 m m Hg | 160/ 110 mm Hg | 94% | 23 min ⁻¹ | 134 mg/d L | 98.6 °F | 118 BP M | 151 mg/dL | 5.0 mg/d L | 231 mg/ L | 2.8 mmol/ L | 1.9 mmol/L | 32.00% | ALIVE |
| MOHA MMAD ISMAI L | 2412312 87687 | 69 | MALE | AFI DISORIENTE D | CK D T2D M CA D | 15 0 m m Hg | 80 m m Hg | 150/ 80 mm Hg | 94% | 20 min ⁻¹ | 94 mg/d L | 97.9 °F | 64 BP M | 129 mg/dL | 5.0 mg/d L | 192 mg/ L | 1.7 mmol/ L | 1.2 mmol/L | 29.00% | ALIVE |
| ELUM ALAI | 2412302 87659 | 74 | MALE | CHEST PAIN | CK D T2D M SHT N | 13 0 m m Hg | 80 m m Hg | 130/ 80 mm Hg | 100% | 22 min ⁻¹ | 124 mg/d L | 97.4 °F | 74 BP M | 111 mg/dL | 4.0 mg/d L | 10 mg/ L | 1.6 mmol/ L | 1.4 mmol/L | 13.00% | ALIVE |
| DHAN A BAKKI YAM | 2412202 84534 | 79 | FEMA LE | GIDDINESS | CK D T2D M SHT N | 20 0 m m Hg | 10 0 m m Hg | 200/ 100 mm Hg | 97% | 24 min ⁻¹ | 81 mg/d L | 96.6 °F | 68 BP M | 103 mg/dL | 6.0 mg/d L | 6 mg/ L | 1.4 mmol/ L | 0.9 mmol/L | 36.00% | ALIVE |
| RAMC HAND RA RAUT | 2412152 82950 | 64 | MALE | SCROTAL SWELLING | CK D T2D M SHT N | 14 0 m m Hg | 90 m m Hg | 140/ 90 mm Hg | 99% | 22 min ⁻¹ | HIG H | 98.1 °F | 80 BP M | 97 mg/dL | 3.0 mg/d L | 431 mg/ L | 4.6 mmol/ L | 7.2 mmol/L | 5.60% | DEAD |
| NAGA RAJ VEMP ULI | 2412182 83990 | 46 | MALE | BREATHLESS NESS | CK D DC LD | 18 0 m | 11 0 m | 180/ 110 mm Hg | 91% | 30 min ⁻¹ | 130 mg/d L | 97.8 °F | 94 BP M | 103 mg/dL | 7.0 mg/d L | 32 mg/ L | 1.2 mmol/ L | 0.7 mmol/L | 41.67% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|--------------------------|------------------|----|------------|--------------------|---------------------------------|-------------------------|-------------------------|-------------------------|-----|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------------|-------|
| | | | | | SHT N | m Hg | m Hg | | | | | | | | | | | | | |
| GIRIB ABU | 2412162 83391 | 51 | MALE | CHEST PAIN | CK D T2D M SHT N | 15 0 m m Hg | 10 0 m m Hg | 150/ 100 mm Hg | 99% | 22 min ⁻¹ | 125 mg/d L | 98.2 °F | 63 BP M | 64 mg/dL | 4.6 mg/d L | 124 mg/ L | 1.4 mmol/ L | 1.1 mmol/L | 20.29% | ALIVE |
| AYYAS WAMY | 2412062 79973 | 74 | MALE | DIALYSIS | CK D T2D M CL D | 18 0 m m Hg | 10 0 m m Hg | 180/ 100 mm Hg | 98% | 21 min ⁻¹ | 140 mg/d L | 98.8 °F | 97 BP M | 105 mg/dL | 4.4 mg/d L | 76 mg/ L | 7.4 mmol/ L | 9.3 mmol/L | -25.68 % | DEAD |
| MALLI GA | 2412072 80316 | 54 | FEMA LE | BREATHLESS NESS | CK D T2D M SHT N | 20 0 m m Hg | 10 0 m m Hg | 200/ 100 mm Hg | 96% | 21 min ⁻¹ | 82 mg/d L | 97.6 °F | 95 BP M | 49 mg/dL | 2.3 mg/d L | <5 mg/ L | 4.8 mmol/ L | 2.2 mmol/L | 54.17% | ALIVE |
| RAJAS EKAR | 2412102 81753 | 55 | MALE | CHEST PAIN | CK D T2D M CA D | 13 0 m m Hg | 80 m m Hg | 130/ 80 mm Hg | 98% | 24 min ⁻¹ | 270 mg/d L | 98.2 °F | 97 BP M | 73 mg/dL | 3.9 mg/d L | <5 mg/ L | 1.3 mmol/ L | 0.9 mmol/L | 29.69% | ALIVE |
| MAHB OOB BASH A | 2412072 80364 | 71 | MALE | BREATHLESS NESS | CK D T2D M | 12 0 m m Hg | 70 m m Hg | 120/ 70 mm Hg | 68% | 20 min ⁻¹ | 155 mg/d L | 97.1 °F | 96 BP M | 120 mg/dL | 5.4 mg/d L | 66 mg/ L | 1.3 mmol/ L | 2.7 mmol/L | -103.01 % | DEAD |
| SUBR AMAN I | 2411282 77787 | 77 | MALE | BREATHLESS NESS | CK D T2D | 18 0 m | 70 m | 180/ 70 | 91% | 26 min ⁻¹ | 155 mg/d L | 97.2 °F | 110 BP M | 160 mg/dL | 7.3 mg/d L | 55 mg/ L | 1.6 mmol/ L | 1.3 mmol/L | 18.75% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------------------|----|------|------------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------|-------|
| NEEL AKAN DAN | | | | ABDOMINAL PAIN | M CA D | m Hg | m Hg | mm Hg | | | | | | | | | | | | |
| ARUM UGAM | 2411272 77450 | 60 | MALE | GIDDINESS | CK D T2D M | 15 0 m m Hg | 10 0 m m Hg | 150/ 100 mm Hg | 100% | 22 min ⁻¹ | 54 mg/d L | 98.0 °F | 100 BP M | 67 mg/dL | 3.0 mg/d L | 24 mg/ L | 2.5 mmol/ L | 1.8 mmol/L | 28.00% | ALIVE |
| THANI GAIM ALAI | 2411252 76635 | 47 | MALE | ALTERED SENSORIUM | CK D T2D M | 14 0 m m Hg | 90 m m Hg | 140/ 90 mm Hg | 97% | 14 min ⁻¹ | 303 mg/d L | 98.1 °F | 82 BP M | 146 mg/dL | 7.3 mg/d L | 222 mg/ L | 2.4 mmol/ L | 1.2 mmol/L | 50.00% | ALIVE |
| RAME SH | 2411172 73480 | 52 | MALE | VOMITING GIDDINESS | DC LD CK D T2D M | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 100% | 22 min ⁻¹ | 168 mg/d L | 97.9 °F | 91 BP M | 135 mg/dL | 3.2 mg/d L | 13 mg/ L | 7.7 mmol/ L | 2.5 mmol/L | 67.53% | ALIVE |
| RAMA CHAN DRA RAJU | 2410072 59458 | 67 | MALE | DECREASED URINE OUTPUT | CK D APE SHT N | 14 0 m m Hg | 10 0 m m Hg | 140/ 100 mm Hg | 80% | 24 min ⁻¹ | 77 mg/d L | 99.6 °F | 100 BP M | 230 mg/dL | 9.9 mg/d L | 238 mg/ L | 4.3 mmol/ L | 6.4 mmol/L | 4.80% | DEAD |
| PERU MAL RAJI | 2410132 61039 | 64 | MALE | BREATHLESS NESS COUGH | CK D SHT N T2D M CA D | 15 0 m m Hg | 10 0 m m Hg | 150/ 100 mm Hg | 85% | 24 min ⁻¹ | 134 mg/d L | 98.1 °F | 93 BP M | 35 mg/dL | 2.3 mg/d L | <5 mg/ L | 2.1 mmol/ L | 0.7 mmol/L | 66.67% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|------------------------|--------------|----|--------|-------------------------------|--------------------------------|----------|----------|--------------|-----|----------------------|-----------|---------|----------|-----------|-----------|----------|-------------|------------|--------|-------|
| SHAN MUGAN SUNDARAM | 241109269609 | 59 | MALE | BREATHLESSNESS | CKD SHTN | 170 mmHg | 100 mmHg | 170/100 mmHg | 98% | 24 min ⁻¹ | 111 mg/dL | 98.0 °F | 72 BP M | 83 mg/dL | 4.5 mg/dL | <5 mg/L | 1.9 mmol/L | 1.2 mmol/L | 36.84% | ALIVE |
| NAGARATHINAM MUNUSWAMY | 240812234251 | 63 | MALE | GIDDINESS | CKD | 110 mmHg | 60 mmHg | 110/60 mmHg | 98% | 22 min ⁻¹ | 191 mg/dL | 96.7 °F | 112 BP M | 39 mg/dL | 4.0 mg/dL | 34 mg/L | 3.7 mmol/L | 0.8 mmol/L | 78.32% | ALIVE |
| VINAYAGI | 241015261664 | 56 | FEMALE | BREATHLESSNESS | CKD SHTN T2DM SEIZURE DISORDER | 140 mmHg | 70 mmHg | 140/70 mmHg | 65% | 34 min ⁻¹ | 217 mg/dL | 97.4 °F | 108 BP M | 76 mg/dL | 2.8 mg/dL | 12 mg/L | 1.7 mmol/L | 1.0 mmol/L | 41.18% | ALIVE |
| KAMALA | 241002257755 | 74 | FEMALE | BREATHLESSNESS FACE PUFFINESS | CKD CAD T2DM APE | 110 mmHg | 60 mmHg | 110/60 mmHg | 84% | 23 min ⁻¹ | 304 mg/dL | 96.2 °F | 54 BP M | 57 mg/dL | 1.8 mg/dL | <5mg/L | 10.8 mmol/L | 8.7 mmol/L | 19.91% | ALIVE |
| SANTHOSH KUMAR | 240922252824 | 28 | MALE | FEVER | CERBRAL | 80 mmHg | 60 mmHg | 80/60 mmHg | 85% | 45 min ⁻¹ | 86 mg/dL | 98.1 °F | 140 BP M | 114 mg/dL | 3.8 mg/dL | 334 mg/L | 2.1 mmol/L | 4.5 mmol/L | 1.43% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | | |
|--------------------|------------------|----|------------|---------------------------------------|---|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|-------------------|-----------------|-------------------|---------------|-------------|-------|--|
| | | | | | PAL SY CK D APE | | | | | | | | | | | | | | | | |
| KAST HURI | 2310281 45682 | 70 | FEMA LE | FEVER VOMITING LOOSE STOOLS | CK D SHT N HY POT HY ROI DIS M HEP AT OM EG AL Y | 80 m m Hg | 50 m m Hg | 80/5 0 mm Hg | 98% | 24 min ⁻¹ | 104 mg/d L | 97.2 °F | 98 BP M | 98 mg/dL | 3.5 mg/d L | 420 mg/ L | 1.7 mmol/ L | 4.6 mmol/L | -26.80 % | DEAD | |
| NAGA MMAL | 2409112 45108 | 46 | FEMA LE | GIDDINESS VOMITING | T2D M SHT N DY SLI PID EMI A | 18 0 m m Hg | 11 0 m m Hg | 180/ 110 mm Hg | 93% | 22 min ⁻¹ | 182 mg/d L | 99.0 °F | 102 BP M | 212 mg/dL | 17.2 mg/d L | 33 mg/ L | 1.8 mmol/ L | 1.2 mmol/L | 34.78% | ALIVE | |
| LOGA NATH AN | 2409112 45091 | 45 | MALE | FEVER DECREASED URINE OUTPUT | CA D SHT N | 15 0 m m Hg | 80 m m Hg | 150/ 80 mm Hg | 100% | 33 min ⁻¹ | 155 mg/d L | 99.3 °F | 133 BP M | 170 mg/dL | 12.2 mg/d L | 397 mg/ L | 2.5 mmol/ L | 2.1 mmol/L | 52.00% | ALIVE | |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|------------------|----|------------|-------------------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|------------------|----------------|-------------------|---------------|--------------|-------|
| PAARI | 2409112 44840 | 59 | MALE | B/L LIMB WEAKNESS SWELLING | DM CK D SHT N | 15 0 m m Hg | 90 m m Hg | 150/ 90 mm Hg | 93% | 25 min ⁻¹ | 508 mg/d L | 97.2 °F | 57 BP M | 44 mg/dL | 2.0 mg/d L | 22 mg/ L | 2.7 mmol/ L | 0.9 mmol/L | 66.67% | ALIVE |
| KUPPA N | 2312241 62427 | 63 | MALE | B/L UPPER LIMB WEAKNESS | CK D SHT N CV A | 15 0 m m Hg | 10 0 m m Hg | 150/ 100 mm Hg | 100% | 20 min ⁻¹ | 152 mg/d L | 97.6 °F | 60 BP M | 250 mg/dL | 5.9 mg/d L | 86 mg/ L | 2.1 mmol/ L | 3.4 mmol/L | -61.90 % | DEAD |
| VIJAY ALAK SHMI | 2409072 42701 | 73 | FEMA LE | CHEST PAIN BREATHLESS NESS | T2D M SHT N CA D CK D | 18 0 m m Hg | 12 0 m m Hg | 180/ 120 mm Hg | 85% | 30 min ⁻¹ | 340 mg/d L | 98.6 °F | 122 BP M | 54 mg/dL | 2.0 mg/d L | 22 mg/ L | 4.3 mmol/ L | 2.0 mmol/L | 53.49% | ALIVE |
| GOPAL NAYA KAR KAMA RAJAN | 2409042 41576 | 64 | MALE | GIDDINESS VOMITING | CA D SHT N T2D M | 17 0 m m Hg | 90 m m Hg | 170/ 90 mm Hg | 86% | 24 min ⁻¹ | 182 mg/d L | 98.0 °F | 88 BP M | 63 mg/dL | 2.5 mg/d L | 45 mg/ L | 3.7 mmol/ L | 2.9 mmol/L | 21.62% | ALIVE |
| SAYEE RA BEGU M | 2408312 40468 | 66 | FEMA LE | BREATHLESS NESS | T2D M SHT N CK D | 16 0 m m Hg | 10 0 m m Hg | 160/ 100 mm Hg | 90% | 23 min ⁻¹ | 226 mg/d L | 97.3 °F | 101 BP M | 131 mg/dL | 7.6 mg/d L | 15 mg/ L | 1.5 mmol/ L | 0.8 mmol/L | 45.58% | ALIVE |
| AJAYA KUMA R | 2310282 45360 | 55 | MALE | ABDOMINAL DISTENSION VOMITING | CK D DC LD | 12 0 m m | 90 m m Hg | 120/ 90 mm Hg | 100% | 33 min ⁻¹ | 236 mg/d L | 98.1 °F | 86 BP M | 126 mg/dL | 2.4 mg/d L | 70 mg/ L | 2.1 mmol/ L | 5.2 mmol/L | -147.62 % | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|---------------|--------------|----|--------|---------------------------------------|--------------------------|----------|----------|---------------|------|----------------------|-----------|---------|----------|----------|-----------|----------|------------|------------|--------|-------|
| YADAVA | | | | | SHT N T2D M | m Hg | | | | | | | | | | | | | | |
| MAHENTHRAN | 240831240184 | 53 | FEMALE | GIDDINESS VOMITING | CKD SHT N T2D M HF | 160 m Hg | 100 m Hg | 160/100 mm Hg | 96% | 18 min ⁻¹ | 375 mg/dL | 98.4 °F | 92 BP M | 41 mg/dL | 1.5 mg/dL | 77 mg/L | 3.8 mmol/L | 2.1 mmol/L | 44.74% | ALIVE |
| RAVI | 240829239629 | 57 | MALE | BREATHLESSNESS | DM SHT N CKD CA D | 160 m Hg | 110 m Hg | 160/110 mm Hg | 84% | 22 min ⁻¹ | 228 mg/dL | 98.2 °F | 120 BP M | 56 mg/dL | 2.9 mg/dL | 299 mg/L | 0.8 mmol/L | 0.4 mmol/L | 50.00% | ALIVE |
| LALITHA | 240813234351 | 64 | FEMALE | DECREASED URINE OUTPUT BREATHLESSNESS | CKD | 160 m Hg | 80 m Hg | 160/80 mm Hg | 100% | 24 min ⁻¹ | 98 mg/dL | 98.4 °F | 98 BP M | 84 mg/dL | 9.6 mg/dL | 27 mg/L | 9.2 mmol/L | 7.2 mmol/L | 21.74% | ALIVE |
| MALLIGANATHAN | 240809233063 | 67 | FEMALE | BREATHLESSNESS | CAD CKD T2D M SHT N CABR | 140 m Hg | 100 m Hg | 140/100 mm Hg | 82% | 27 min ⁻¹ | 306 mg/dL | 97.6 °F | 84 BP M | 88 mg/dL | 2.9 mg/dL | 35 mg/L | 2.4 mmol/L | 1.3 mmol/L | 42.98% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|------------------------------|------------------|----|------------|---|---|-------------------------|-------------------------|-------------------------|-----|-------------------------|------------------|------------|----------------|--------------|-------------------|-----------------|-------------------|---------------|--------|-------|
| | | | | | EAS T | | | | | | | | | | | | | | | |
| JAYAN THI SLEVA RAJ | 2408072 32656 | 58 | FEMA LE | BREATHLESS NESS | T2D M SHT N HY POT HY ROI DIS M | 14 0 m m Hg | 80 m m Hg | 140/ 80 mm Hg | 85% | 27 min ⁻¹ | 245 mg/d L | 97.5 °F | 112 BP M | 72 mg/dL | 4.3 mg/d L | 348 mg/ L | 4.3 mmol/ L | 2.6 mmol/L | 39.53% | ALIVE |
| SALO MI | 2407272 29194 | 52 | FEMA LE | BREATHLESS NESS | CK D SHT N T2D M | 22 0 m m Hg | 12 0 m m Hg | 220/ 120 mm Hg | 98% | 21 min ⁻¹ | 98 mg/d L | 98.4 °F | 102 BP M | 103 mg/dL | 8.7 mg/d L | 112 mg/ L | 2.2 mmol/ L | 1.3 mmol/L | 40.91% | ALIVE |
| DURG ADEVI | 2407252 28636 | 54 | FEMA LE | BREATHLESS NESS GIDDINESS | CK D T2D M HY POT HY ROI DIS M AN EMI A | 15 0 m m Hg | 90 m m Hg | 150/ 90 mm Hg | 90% | 24 min ⁻¹ | 259 mg/d L | 97.6 °F | 88 BP M | 138 mg/dL | 9.2 mg/d L | 135 mg/ L | 2.3 mmol/ L | 1.0 mmol/L | 57.39% | ALIVE |
| ARJUN | 2407202 26954 | 30 | MALE | COUGH BREATHLESS NESS VOMITING | T2D M SHT N | 21 0 m | 11 0 m | 210/ 110 mm Hg | 75% | 32 min ⁻¹ | 151 mg/d L | 96.8 °F | 100 BP M | 197 mg/dL | 15.2 mg/d L | 39 mg/ L | 2.5 mmol/ L | 2.0 mmol/L | 20.00% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|------------------|----|------------|---------------------------------------|---|-------------------------|-------------------------|-------------------------|-----|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|--------------------|----------------|--------|-------|
| | | | | | | m Hg | m Hg | | | | | | | | | | | | | |
| MEEN ATCHI | 2407142 24929 | 74 | FEMA LE | BREATHLESS NESS | CK D SHT N T2D M | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 64% | 30 min ⁻¹ | 125 mg/d L | 98.2 °F | 62 BP M | 100 mg/dL | 9.5 mg/d L | 8 mg/ L | 19.0 mmol/ L | 20.0 mmol/L | 5.55% | DEAD |
| ANHA LATCH I NAGA PPAN | 2407052 22222 | 59 | FEMA LE | ABDOMINAL PAIN VOMITING | T2D M SHT N CK D | 10 0 m m Hg | 60 m m Hg | 100/ 60 mm Hg | 95% | 20 min ⁻¹ | 299 mg/d L | 98.0 °F | 80 BP M | 53 mg/dL | 2.3 mg/d L | 178 mg/ L | 1.8 mmol/ L | 1.4 mmol/L | 23.08% | ALIVE |
| PUSHP A | 2407092 23296 | 63 | FEMA LE | BREATHLESS NESS | T2D M SHT N CK D CA D | 20 0 m m Hg | 12 0 m m Hg | 200/ 120 mm Hg | 95% | 28 min ⁻¹ | 234 mg/d L | 98.6 °F | 114 BP M | 123 mg/dL | 5.2 mg/d L | 16 mg/ L | 0.9 mmol/ L | 0.8 mmol/L | 11.11% | ALIVE |
| HASIN A | 2407042 21852 | 69 | FEMA LE | LEG SWELLING BREATHLESS NESS | T2D M SHT N | 15 0 m m Hg | 70 m m Hg | 150/ 70 mm Hg | 83% | 26 min ⁻¹ | 164 mg/d L | 98.6 °F | 82 BP M | 82 mg/dL | 2.6 mg/d L | 17 mg/ L | 1.1 mmol/ L | 0.9 mmol/L | 18.18% | ALIVE |
| GLAD YS JOSEP H | 2407032 21437 | 83 | FEMA LE | LETHARGY DECREASED RESPONSE | CA D CK D SHT N HY POT | 18 0 m m Hg | 10 0 m m Hg | 180/ 100 mm Hg | 99% | 20 min ⁻¹ | 49 mg/d L | 98.2 °F | 80 BP M | 166 mg/dL | 6.8 mg/d L | 61 mg/ L | 1.2 mmol/ L | 0.8 mmol/L | 31.62% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|------------------|----|------|-------------------------------------|--|---------------------|---------------------|---------------------|-----|-------------------------|------------------|-------------|----------------|--------------|------------------|-----------------|-------------------|---------------|-------------|-------|--|
| | | | | | HY ROI DIS M AN EMI A | | | | | | | | | | | | | | | | |
| VARD HARAJ AN | 2406012 11772 | 58 | MALE | FALL FROM BED | CA D SHT N PAR KIN SO NS DIS EAS E | 80 m m Hg | 60 m m Hg | 80/60 mm Hg | 99% | 36 min ⁻¹ | 158 mg/d L | 101.5 °F | 105 BP M | 111 mg/dL | 3.0 mg/d L | 8 mg/ L | 1.3 mmol/ L | 2.3 mmol/L | 7.60% | DEAD | |
| PARA MESH WARA N | 2405312 11348 | 77 | MALE | NUMBNESS B/L UPPER LOWER LIMB | CK D SHT N T2D M CA D | 150 m m Hg | 100 m m Hg | 150/100 mm Hg | 98% | 24 min ⁻¹ | 174 mg/d L | 97.4 °F | 94 BP M | 84 mg/dL | 2.5 mg/d L | 25 mg/ L | 3.8 mmol/ L | 2.1 mmol/L | 44.88% | ALIVE | |
| GANE SAN | 2405282 10216 | 64 | MALE | BREATHLESS NESS | T2D M SHT N CK D | 160 m m Hg | 90 m m Hg | 160/90 mm Hg | 93% | 30 min ⁻¹ | 119 mg/d L | 97.5 °F | 95 BP M | 74 mg/dL | 5.6 mg/d L | 24 mg/ L | 1.6 mmol/ L | 1.4 mmol/L | 12.50% | ALIVE | |
| NATA RAJAN | 2308071 17024 | 56 | MALE | NECK SWELLING | CK D TB | 140 m | 90 m | 140/90 | 99% | 20 min ⁻¹ | 380 mg/d L | 99.3 °F | 112 BP M | 211 mg/dL | 3.4 mg/d L | 112 mg/ L | 1.4 mmol/ L | 1.6 mmol/L | -14.29 % | DEAD | |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|----------------------------|------------------|----|------------|-------------------------|---|-------------------------|--------------------|------------------------|------|-------------------------|------------------|------------|----------------|--------------|-------------------|-----------------|--------------------|---------------|-------------|-------|
| | | | | | SKT N CA D | m Hg | m Hg | mm Hg | | | | | | | | | | | | |
| SARA LADE VI | 2505053 31418 | 47 | FEMA LE | BREATHLESS NESS | TH YR OID SHT N CK D | 10 0 m m Hg | 80 m m Hg | 100/ 80 mm Hg | 99% | 24 min ⁻¹ | 143 mg/d L | 98.2 °F | 143 BP M | 54 mg/dL | 0.8 mg/d L | 38 mg/ L | 13.1 mmol/ L | 1.5 mmol/L | 88.55% | ALIVE |
| MUNU SWAM Y | 2505013 30250 | 58 | MALE | BREATHLESS NESS | SHT N CK D CA D | 16 0 m m Hg | 60 m m Hg | 160/ 60 mm Hg | 100% | 24 min ⁻¹ | 148 mg/d L | 97.6 °F | 93 BP M | 339 mg/dL | 26.7 mg/d L | 232 mg/ L | 0.8 mmol/ L | 0.6 mmol/L | 25.00% | ALIVE |
| GUBE NDIRA N | 2407182 26372 | 58 | MALE | BREATHLESS NESS | SHT N CK D CA D | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 98% | 26 min ⁻¹ | 134 mg/d L | 97.1 °F | 78 BP M | 193 mg/dL | 16.3 mg/d L | 30 mg/ L | 8.1 mmol/ L | 1.2 mmol/L | 85.19% | ALIVE |
| PUNIT HA SAMB ATH | 2308231 21809 | 61 | FEMA LE | GENERALISE D FATIGUE | SHT N T2D M HF HY POT HY ROI DIS M APE | 13 0 m m Hg | 90 m m Hg | 130/ 90 mm Hg | 99% | 20 min ⁻¹ | 190 mg/d L | 96.5 °F | 84 BP M | 143 mg/dL | 4.7 mg/d L | 23 mg/ L | 2.2 mmol/ L | 2.5 mmol/L | -13.64 % | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|----------------|--------------|----|--------|-----------------------------|------------------|----------|---------|-------------|------|----------------------|-----------|---------|---------|-----------|-----------|----------|------------|------------|--------|-------|
| MAARTHAL | 250501330270 | 55 | FEMALE | BREATHLESSNESS FEVER | SHT N CK D CAD | 130 mmHg | 70 mmHg | 130/70 mmHg | 99% | 22 min ⁻¹ | 140 mg/dL | 97.1 °F | 98 BP M | 66 mg/dL | 2.6 mg/dL | 22 mg/L | 8.5 mmol/L | 6.3 mmol/L | 25.88% | ALIVE |
| KASI | 250517335421 | 65 | FEMALE | BREATHLESSNESS PEDEAL EDEMA | SHT N CK D APE | 110 mmHg | 70 mmHg | 110/70 mmHg | 100% | 24 min ⁻¹ | 151 mg/dL | 97.2 °F | 60 BP M | 148 mg/dL | 2.9 mg/dL | 35 mg/L | 7.8 mmol/L | 1.1 mmol/L | 85.90% | ALIVE |
| PRASANTH | 241209281243 | 26 | MALE | BREATHLESSNESS | SHT N CK D | 110 mmHg | 70 mmHg | 110/70 mmHg | 98% | 32 min ⁻¹ | 125 mg/dL | 98.1 °F | 80 BP M | 119 mg/dL | 8.5 mg/dL | 120 mg/L | 1.5 mmol/L | 1.1 mmol/L | 26.67% | ALIVE |
| KASTHURI | 250504331017 | 49 | FEMALE | BREATHLESSNESS CHEST PAIN | SHT N T2D M CK D | 130 mmHg | 80 mmHg | 130/80 mmHg | 98% | 22 min ⁻¹ | 201 mg/dL | 97.4 °F | 88 BP M | 107 mg/dL | 6.7 mg/dL | 19 mg/L | 1.7 mmol/L | 1.2 mmol/L | 29.82% | ALIVE |
| PROMODHAKUMARI | 250519335853 | 70 | FEMALE | BREATHLESSNESS FEVER | SHT N T2D M CK D | 140 mmHg | 80 mmHg | 140/80 mmHg | 89% | 26 min ⁻¹ | 152 mg/dL | 99.4 °F | 78 BP M | 90 mg/dL | 3.8 mg/dL | 345 mg/L | 2.3 mmol/L | 1.4 mmol/L | 39.13% | ALIVE |
| KARUNAKARAN | 2210105060 | 70 | MALE | BREATHLESSNESS | SHT N T2D M CAD | 150 mmHg | 80 mmHg | 150/80 mmHg | 85% | 27 min ⁻¹ | 186 mg/dL | 98.3 °F | 90 BP M | 288 mg/dL | 3.8 mg/dL | 248 mg/L | 2.2 mmol/L | 4.1 mmol/L | 8.90% | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|-------------|----|--------|--------------------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|-------------|----------------|--------------|------------------|-----------------|-------------------|---------------|-------------|-------|
| GUNA | 22102813258 | 57 | MALE | BREATHLESS NESS FEVER | SHT N CK D | 18 0 m m Hg | 10 0 m m Hg | 180/ 100 mm Hg | 83% | 40 min ⁻¹ | 151 mg/d L | 102.0 °F | 151 BP M | 102 mg/dL | 4.3 mg/d L | 323 mg/ L | 3.2 mmol/ L | 4.1 mmol/L | 5.20% | DEAD |
| RUKU MANI | 22111119149 | 68 | FEMALE | BREATHLESS NESS FEVER | SHT N T2D M | 11 0 m m Hg | 60 m m Hg | 110/ 60 mm Hg | 100% | 19 min ⁻¹ | 267 mg/d L | 99.3 °F | 70 BP M | 138 mg/dL | 2.5 mg/d L | 224 mg/ L | 1.6 mmol/ L | 2.5 mmol/L | 5.60% | DEAD |
| MAYA NBAT HBEE ALIYAR | 22111520325 | 62 | FEMALE | BREATHLESS NESS CHEST PAIN | SHT N T2D M PE CK D CA D | 16 0 m m Hg | 90 m m Hg | 160/ 90 mm Hg | 82% | 28 min ⁻¹ | 261 mg/d L | 96.2 °F | 102 BP M | 144 mg/dL | 7.7 mg/d L | 11 mg/ L | 2.1 mmol/ L | 3.2 mmol/L | -52.38 % | DEAD |
| KART HICK | 22111520562 | 32 | MALE | B/L LIMB WEAKNESS SWELLING | T2D M CK D IDA SHT N | 17 0 m m Hg | 10 0 m m Hg | 170/ 100 mm Hg | 97% | 22 min ⁻¹ | 172 mg/d L | 100.1 °F | 123 BP M | 57 mg/dL | 2.0 mg/d L | 34 mg/ L | 3.2 mmol/ L | 2.1 mmol/L | 34.38% | ALIVE |
| ANNA MALA I GOVIDAN | 23031267567 | 54 | MALE | LOOSE STOOLS ABDOMINAL PAIN | T2D M HY POT HY ROI D CK D | 20 0 m m Hg | 11 0 m m Hg | 200/ 110 mm Hg | 100% | 26 min ⁻¹ | 60 mg/d L | 97.2 °F | 54 BP M | 200 mg/dL | 5.7 mg/d L | <5 mg/ L | 3.2 mmol/ L | 3.5 mmol/L | 9.21 | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|------------------------|--------------|----|--------|---------------------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------------|------|
| MUTHUKUMAR | 22122737627 | 54 | MALE | BREATHLESS NESS FOOT ULCER | SHT N CK D | 14 0 m m Hg | 70 m m Hg | 140/ 70 mm Hg | 98% | 22 min ⁻¹ | 231 mg/d L | 98.3 °F | 90 BP M | 102 mg/dL | 9.4 mg/d L | 42 mg/ L | 6.5 mmol/ L | 7.5 mmol/L | -15.38 % | DEAD |
| RAJENDHIRAN | 231121152560 | 66 | MALE | SCROTAL SWELLING | SHT N CK D T2D M | 17 0 m m Hg | 11 0 m m Hg | 170/ 110 mm Hg | 100% | 19 min ⁻¹ | 506 mg/d L | 98.2 °F | 116 BP M | 179 mg/dL | 6.2 mg/d L | 238 mg/ L | 2.1 mmol/ L | 3.4 mmol/L | -61.90 % | DEAD |
| SUBRAMANIYAMPONNUSWAMY | 22122737683 | 71 | MALE | BREATHLESS NESS | SHT N T2D M CK D CA D | 18 0 m m Hg | 90 m m Hg | 180/ 90 mm Hg | 97% | 22 min ⁻¹ | 251 mg/d L | 97.7 °F | 120 BP M | 100 mg/dL | 2.4 mg/d L | 86 mg/ L | 1.2 mmol/ L | 3.5 mmol/L | -191.67 % | DEAD |
| ANTHONYAMMAL | 22122938233 | 73 | FEMALE | VOMITING SLURRING OF SPEECH | CA BR EAS T SHT N T2D M AN EMI A | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 99% | 18 min ⁻¹ | 53 mg/d L | 97.4 °F | 98 BP M | 69 mg/dL | 2.2 mg/d L | 224 mg/ L | 1.1 mmol/ L | 1.6 mmol/L | -45.45 % | DEAD |
| KABILAN | 22123038771 | 22 | MALE | BREATHLESS NESS PEDEAL EDEMA | SHT N CK D | 14 0 m m Hg | 80 m m Hg | 140/ 80 mm Hg | 100% | 23 min ⁻¹ | 102 mg/d L | 95.2 °F | 84 BP M | 54 mg/dL | 2.5 mg/d L | 53 mg/ L | 1.2 mmol/ L | 2.3 mmol/L | 9.10% | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|------------------|----|------------|-------------------------------|--|-------------------------|--------------------|------------------------|------|-------------------------|------------------|-------------|----------------|--------------|------------------|-----------------|-------------------|---------------|--------|-------|
| PERU MAL SUBR AMAN I | 2401051 66005 | 50 | MALE | B/L LOWER LIMB SWELLING | T2D M SHT N CK D | 15 0 m m Hg | 90 m m Hg | 150/ 90 mm Hg | 76% | 30 min ⁻¹ | 409 mg/d L | 100.0 °F | 114 BP M | 109 mg/dL | 8.5 mg/d L | 221 mg/ L | 1.9 mmol/ L | 1.4 mmol/L | 26.32% | ALIVE |
| NAGA RAJAN | 2401271 71953 | 43 | MALE | BREATHLESS NESS | T2D M CK D SHT N HF | 13 0 m m Hg | 80 m m Hg | 130/ 80 mm Hg | 100% | 22 min ⁻¹ | 324 mg/d L | 97.5 °F | 76 BP M | 107 mg/dL | 7.8 mg/d L | 60 mg/ L | 0.7 mmol/ L | 1.2 mmol/L | 7.14% | DEAD |
| KANT HAL AMMA L | 2401291 72139 | 63 | FEMA LE | LOOSE STOOLS | CK D DM SHT N CA D | 14 0 m m Hg | 80 m m Hg | 140/ 80 mm Hg | 100% | 24 min ⁻¹ | 40 mg/d L | 98.2 °F | 94 BP M | 74 mg/dL | 3.5 mg/d L | 231 mg/ L | 2.4 mmol/ L | 1.7 mmol/L | 29.17% | ALIVE |
| DHAN ALAK SHMI | 2211011 4624 | 58 | FEMA LE | ABDOMINAL PAIN | T2D M CK D | 10 0 m m Hg | 80 m m Hg | 100/ 80 mm Hg | 98% | 24 min ⁻¹ | 444 mg/d L | 98.6 °F | 84 BP M | 93 mg/dL | 3.5 mg/d L | 33 mg/ L | 2.4 mmol/ L | 1.0 mmol/L | 58.33% | ALIVE |
| DHAN RAJ | 2211061 6626 | 63 | MALE | BREATHLESS NESS | T2D M CK D SHT N CA D PE | 17 0 m m Hg | 80 m m Hg | 170/ 80 mm Hg | 66% | 28 min ⁻¹ | 150 mg/d L | 98.2 °F | 80 BP M | 86 mg/dL | 6.2 mg/d L | 89 mg/ L | 0.9 mmol/ L | 0.8 mmol/L | 11.11% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|-------------------------|-------------|----|--------|--------------------|-------------------|----------|---------|-------------|------|----------------------|-----------|----------|----------|-----------|-----------|----------|------------|------------|----------|-------|
| ABDUL KAREEM | 22112223927 | 57 | MALE | DECREASED APPETITE | CKD SHTN CAD T2DM | 100 mmHg | 80 mmHg | 100/80 mmHg | 100% | 38 min ⁻¹ | 170 mg/dL | 101.4 °F | 115 BP M | 128 mg/dL | 4.6 mg/dL | 289 mg/L | 5.3 mmol/L | 2.1 mmol/L | 60.38% | ALIVE |
| MAQB OOL KHADAR | 23011945838 | 67 | MALE | HEMATOCHEZIA | CAD CKD SHTN | 130 mmHg | 70 mmHg | 130/70 mmHg | 100% | 22 min ⁻¹ | 103 mg/dL | 98.3 °F | 66 BP M | 105 mg/dL | 3.7 mg/dL | 186 mg/L | 1.3 mmol/L | 2.0 mmol/L | -53.85 % | DEAD |
| DEVA KI HARIK RISHNAN | 23050985837 | 68 | FEMALE | BREATHLESSNESS | CKD APE SHTN T2DM | 200 mmHg | 90 mmHg | 200/90 mmHg | 85% | 30 min ⁻¹ | 152 mg/dL | 98.6 °F | 83 BP M | 34 mg/dL | 5.7 mg/dL | 12 mg/L | 1.2 mmol/L | 2.1 mmol/L | -75.00 % | DEAD |
| SANKAR GOPAL | 23012146816 | 60 | MALE | FEVER | T2DM SHTN CKD | 160 mmHg | 80 mmHg | 160/80 mmHg | 89% | 20 min ⁻¹ | 118 mg/dL | 100.9 °F | 102 BP M | 64 mg/dL | 9.1 mg/dL | 53 mg/L | 1.4 mmol/L | 0.8 mmol/L | 42.86% | ALIVE |
| VASANTHA THIRU VENGADAM | 2302085575 | 53 | FEMALE | CHEST PAIN | CKD APE SHTN CAD | 170 mmHg | 90 mmHg | 170/90 mmHg | 87% | 22 min ⁻¹ | 243 mg/dL | 98.2 °F | 90 BP M | 114 mg/dL | 7.1 mg/dL | 231 mg/L | 3.1 mmol/L | 2.4 mmol/L | 22.58% | ALIVE |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|---|------------------|----|------------|----------------------------------|--|-------------------------|-------------------------|-------------------------|------|-------------------------|------------------|------------|----------------|--------------|-------------------|-----------------|-------------------|---------------|-------------|-------|
| RAMA NI BAI PARTH ASAR ATHY | 2302155 8308 | 65 | FEMA LE | ABDOMINAL PAIN | SHT N T2D M CK D CA D | 15 0 m m Hg | 80 m m Hg | 150/ 80 mm Hg | 100% | 21 min ⁻¹ | 227 mg/d L | 96.0 °F | 130 BP M | 87 mg/dL | 6.8 mg/d L | 102 mg/ L | 3.2 mmol/ L | 3.4 mmol/L | 6.25% | DEAD |
| VIJAY ALAK SHMI | 2303046 4465 | 55 | FEMA LE | GIDDINESS VOMITING | T2D M SHT N | 18 0 m m Hg | 70 m m Hg | 180/ 70 mm Hg | 98% | 19 min ⁻¹ | 230 mg/d L | 97.3 °F | 98 BP M | 71 mg/dL | 6.9 mg/d L | 197 mg/ L | 1.6 mmol/ L | 2.5 mmol/L | -56.25 % | DEAD |
| SAMB HU KUMA R | 2303076 5490 | 29 | MALE | FEVER BREATHLESS NESS | SHT N CK D | 90 m m Hg | 60 m m Hg | 90/6 0 mm Hg | 88% | 36 min ⁻¹ | 165 mg/d L | 97.2 °F | 106 BP M | 282 mg/dL | 27.7 mg/d L | 234 mg/ L | 1.9 mmol/ L | 1.0 mmol/L | 47.37% | ALIVE |
| UMAD EVI RAME SH | 2305269 2346 | 44 | FEMA LE | ABDOMINAL PAIN CHEST PAIN | SHT N CK D T2D M | 80 m m Hg | 60 m m Hg | 80/6 0 mm Hg | 89% | 29 min ⁻¹ | 116 mg/d L | 97.0 °F | 114 BP M | 151 mg/dL | 7.5 mg/d L | 255 mg/ L | 2.5 mmol/ L | 3.1 mmol/L | 2.40% | DEAD |
| SASID HARA N | 2306149 8911 | 70 | MALE | CHEST PAIN BREATHLESS NESS | CK D SHT N AC S | 18 0 m m Hg | 11 0 m m Hg | 180/ 110 mm Hg | 96% | 18 min ⁻¹ | 132 mg/d L | 97.2 °F | 86 BP M | 102 mg/dL | 9.9 mg/d L | 102 mg/ L | 1.3 mmol/ L | 2.3 mmol/L | -76.92 % | DEAD |
| MURU GAN V | 2307101 07371 | 60 | MALE | BREATHLESS NESS | CK D SHT N | 14 0 m m Hg | 70 m m Hg | 140/ 70 mm Hg | 89% | 24 min ⁻¹ | 133 mg/d L | 97.6 °F | 90 BP M | 203 mg/dL | 12.9 mg/d L | 285 mg/ L | 1.4 mmol/ L | 2.4 mmol/L | -71.43 % | DEAD |

A COMPARATIVE STUDY OF CRP, BASELINE LACTATE, AND 6-HOUR LACTATE CLEARANCE IN CHRONIC KIDNEY DISEASE PATIENTS IN EMERGENCY DEPARTMENT

| | | | | | | | | | | | | | | | | | | | | |
|-----------------------|------------------|----|------------|--|--|-------------------------|--------------------|------------------------|-----|-------------------------|------------------|------------|----------------|--------------|-------------------|-----------------|-------------------|---------------|-------------|------|
| SARA VANA N | 2308181 20368 | 51 | MALE | SLIP AND FALL BACK PAIN | CK D CA D T2D M SHT N | 13 0 m m Hg | 90 m m Hg | 130/ 90 mm Hg | 99% | 20 min ⁻¹ | 167 mg/d L | 98.1 °F | 88 BP M | 121 mg/dL | 7.7 mg/d L | 84 mg/ L | 3.1 mmol/ L | 4.5 mmol/L | -45.16 % | DEAD |
| RAJAA MMAL | 2308251 22789 | 80 | FEMA LE | BACK PAIN LOSS OF APPETITE | CK D SHT N | 10 0 m m Hg | 60 m m Hg | 100/ 60 mm Hg | 97% | 20 min ⁻¹ | 102 mg/d L | 97.0 °F | 99 BP M | 57 mg/dL | 1.7 mg/d L | 56 mg/ L | 1.7 mmol/ L | 2.4 mmol/L | 8.60% | DEAD |
| SUBBI RAMA NI | 2309101 27920 | 58 | MALE | BREATHLESS NESS | CK D T2D M SHT N APE | 12 0 m m Hg | 80 m m Hg | 120/ 80 mm Hg | 98% | 22 min ⁻¹ | 200 mg/d L | 98.2 °F | 104 BP M | 345 mg/dL | 16.6 mg/d L | 83 mg/ L | 1.4 mmol/ L | 1.6 mmol/L | -14.29 % | DEAD |
| THIRU VENK ADAM | 2310514 0916 | 52 | MALE | DECREASED URINE OUTPUT BREATHLESS NESS | CK D SHT N T2D M CA D | N R | N R | NR/ NR mm Hg | 78% | 38 min ⁻¹ | 247 mg/d L | 96.7 °F | 88 BP M | 107 mg/dL | 3.7 mg/d L | 142 mg/ L | 3.2 mmol/ L | 4.5 mmol/L | -40.63 % | DEAD |