COMMUNITY STUDY OF PREVALENCE AND RISK FACTORS FOR CHRONIC KIDNEY DISEASE AMONG PAEDIATRIC AGE GROUP IN ONDO WEST LOCAL GOVERNMENT AREA OF ONDO STATE NIGERIA

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INTRODUCTION AND LITERATURE

Introduction and Literature

The NKF/KDOQI in 2002 defined CKD as kidney damage manifested by structural or functional abnormalities lasting three or more months with or without decreased glomerular filtration rates (GFR) or a GFR< 60mls/min/ 1.73 m^2

Introduction and Literature

- Little is known about the epidemiology of chronic kidney disease (CKD) among the paediatric population especially in Sub-Sahara Africa.
- Due to the asymptomatic nature of early CKD
- A prevalence of 12.1 to 74.7 cases per million children has been reported previously.

Introduction and Literature

- Nigerian data so far:

➢main source: major tertiary in-hospital data

➢Tip of the iceberg (not truly representative).

➢Examples: 4.0% (Enugu); 4.5% (Mid-west); 1.6% (Ilorin); 3.1% (Uyo)

Okoro et al, 1999; Ibadin et al, 2003; Adedoyin et al, 2012; Ikpeme et al, 2014

Introduction and Literature

- The highest percentage of paediatric CKD cases are potentially reversible (congenital)
- In Port-Harcourt, 28.9% of CKD were due to congenital disorders

Introduction and Literature

- CKD in children is compounded by one or a combination of growth problems, nutrition, electrolyte imbalance, anaemia and hypertension.
- The child's body system copes less with uraemia resulting in high levels of mortality among them.
- Early detection and management of kidney malfunction is crucial to delay or prevent progression of CKD to ESRD.

OBJECTIVES

- We therefore set out to determine

  prevalence of CKD

  risk factors for CKD among children in

  Ondo State.

METHOD

Method

- 114 school children whose parents/guardians gave consent were studied
- Children outside 2-17 years and those who were acutely ill were excluded
- Their bio data was recorded on a proforma
- Their weights and heights were obtained with a standard stadiometer (*RGZ-160 Lincon* Mark Medical England)

Method

- BMI was calculated using wt/ht^2
- BP was measured using *Accossons Mercury* Spyhgmomanometer with appropriate cuff for age on the right upper arm after 5 minutes rest to the nearest 2mmHg

Method

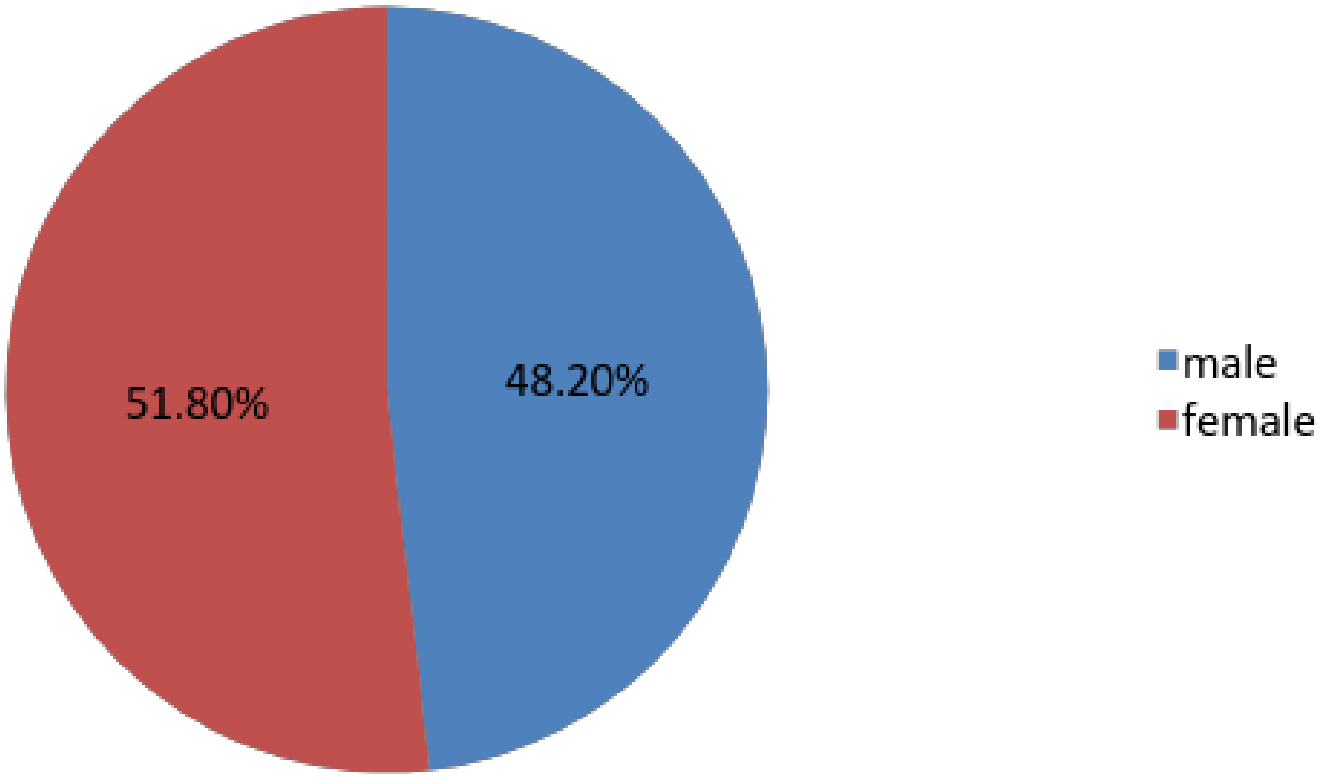
- Blood samples were collected for Serum chemistry, haemogram, fasing lipids and albumin.
- eGFR was calculated using *Schwartz formula*
- Urine samples for analysis were obtained after adequate counsel of the parents/guardians
- *Combi 10 Unistrip®* was employed for urinalysis

Method

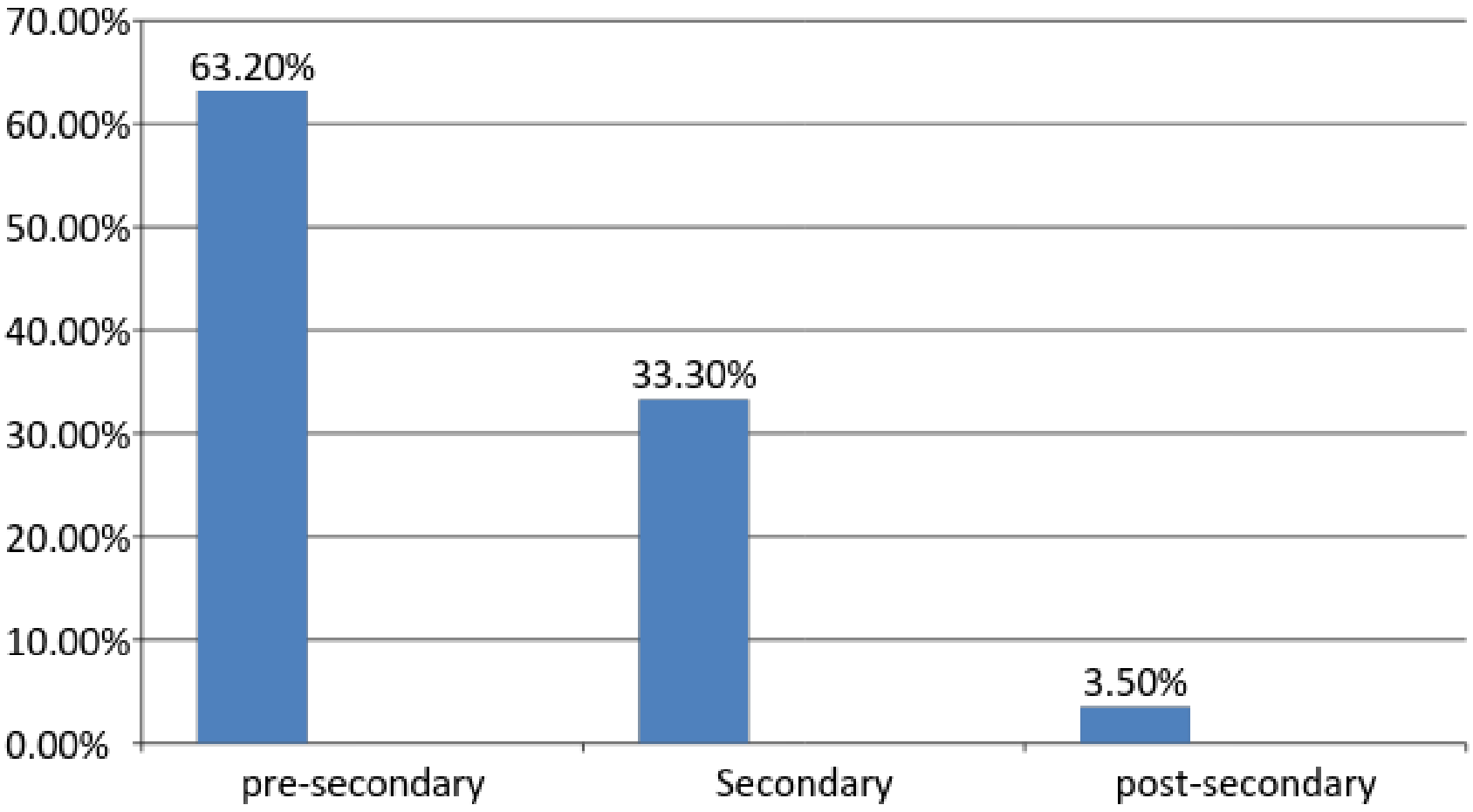
- Height, BMI and BP percentiles were determined using the appropriate charts
- Written consent was obtained from the school authority
- Data was analyzed with SPSS 17.

RESULTS

Gender distribution of subjects



Distribution of subjects by class



Clinical and Lab parameters of subjects

Parameter	Mean	Standard deviation
Age (years)	8.99	4.26
eGFR (ml/min/1.73m^2) BMI (kg/m^2)	86.59 16.80	27.6 3.09
SBP (mmHg)	97.88	16.29
DBP (mmHg)	57.84	11.66
PCV (%)	37.23	4.34
Serum creatinine (umol/L)	75.14	16.72
Total cholesterol (mmol/L)	4.20	0.83
Triglyceride (mmol/L)	1.85	0.29
HDL-cholesterol (mmol/L)	1.24	0.21
Albumin (g/L)	40.60	6.23

KDOQI STAGING OF CKD (n=104)

KDOQI STAGE	FREQUENCY	PERCENT
Stage 1	36	34.6%
Stage 2	60	57.7%
Stage 3	8	7.7%
Stage 4	0	0%
Stage 5	0	0%

CKD BY GENDER

KDOQI STAGE	Male	Female
Stage 1	20 (55.6%)	16 (44.4%)
Stage 2	29 (48.3%)	31 (51.7%)
Stage 3	5 (62.5%)	3 (37.5%)
Stage 4	0	0
Stage 5	0	0

eGFR by various criteria for CKD in our paediatric age-group

- In our study

➢(8) 7.7% (cut off <60ml/min/1.73m^2)

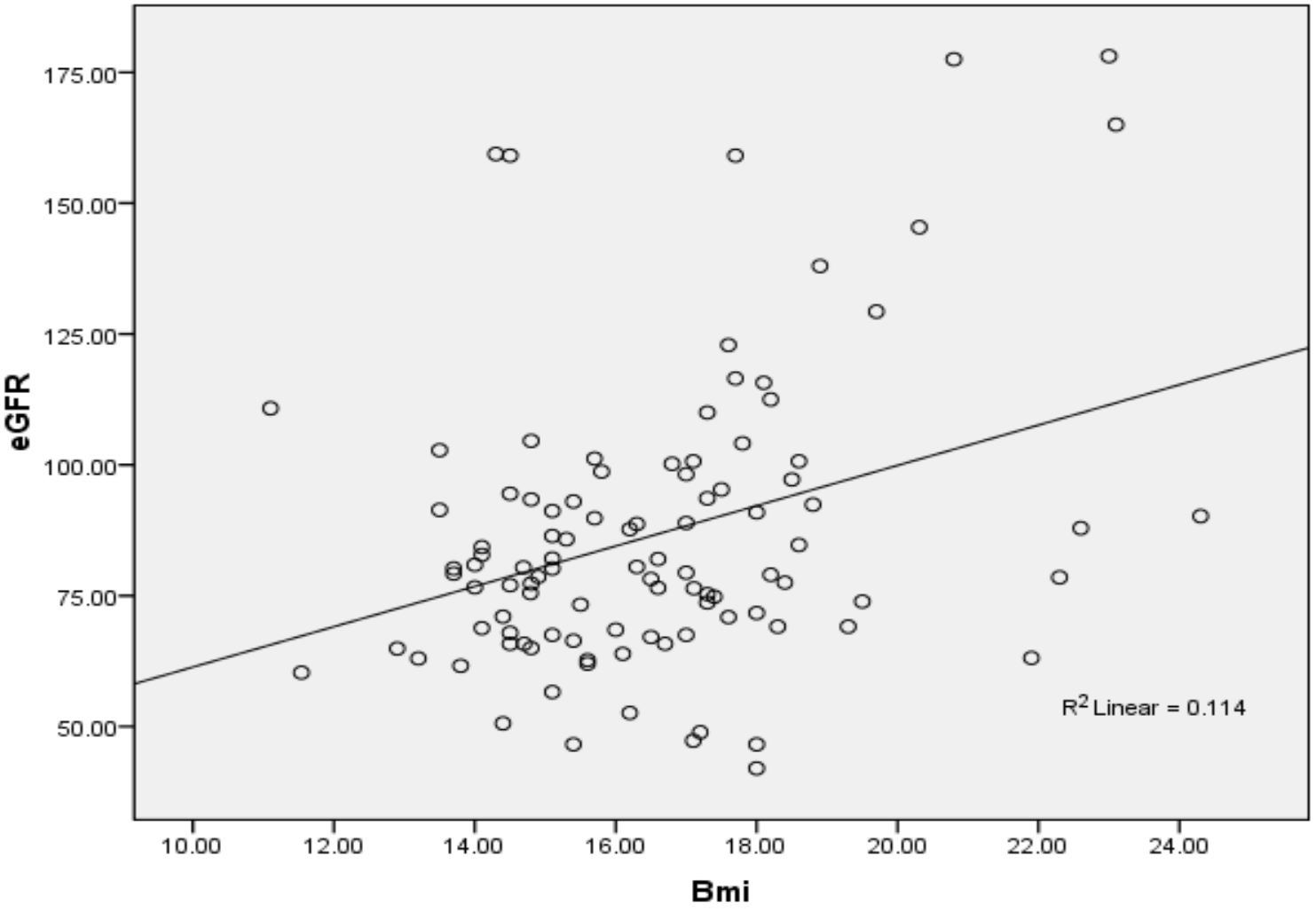
➢**(37) 35.6%** (cut off <75ml/min/1.73m^2)

Hans Pottel et al. ***Pediatric Nephrology: Journal of the International Pediatric Nephrology Association (2015), vol. 30, pp. 821-828***

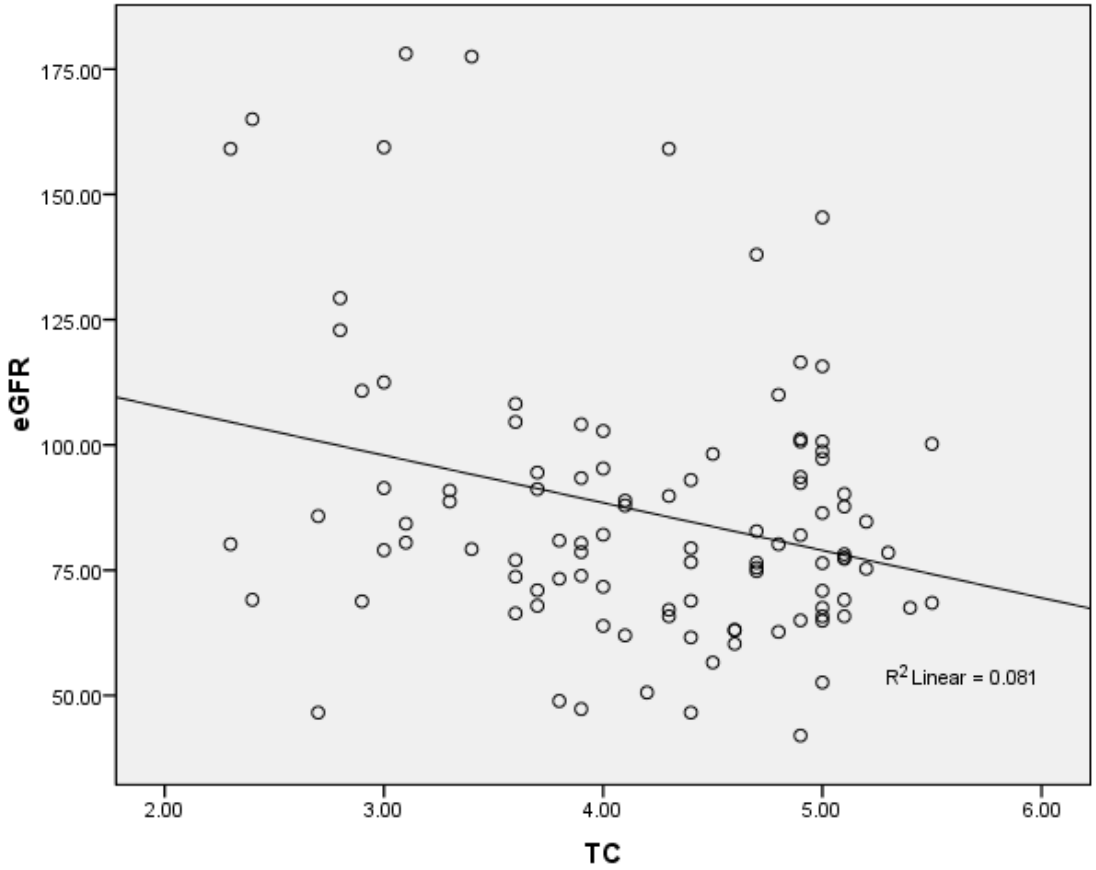
Prevalence of risk factors

Risk factor	Percentage	Male	Female
		Freq (%)	Freq (%)
Pre-hypertension	12.4%	5 (35.7)	9 (64.3%)
Hypertension	12.8%	1 (10.0%)	9 (90%)
Overweight	7.9%	5 (55.6%)	4 (44.4%)
Obesity	5.3%	1 (16.7%)	5 (83.3%)

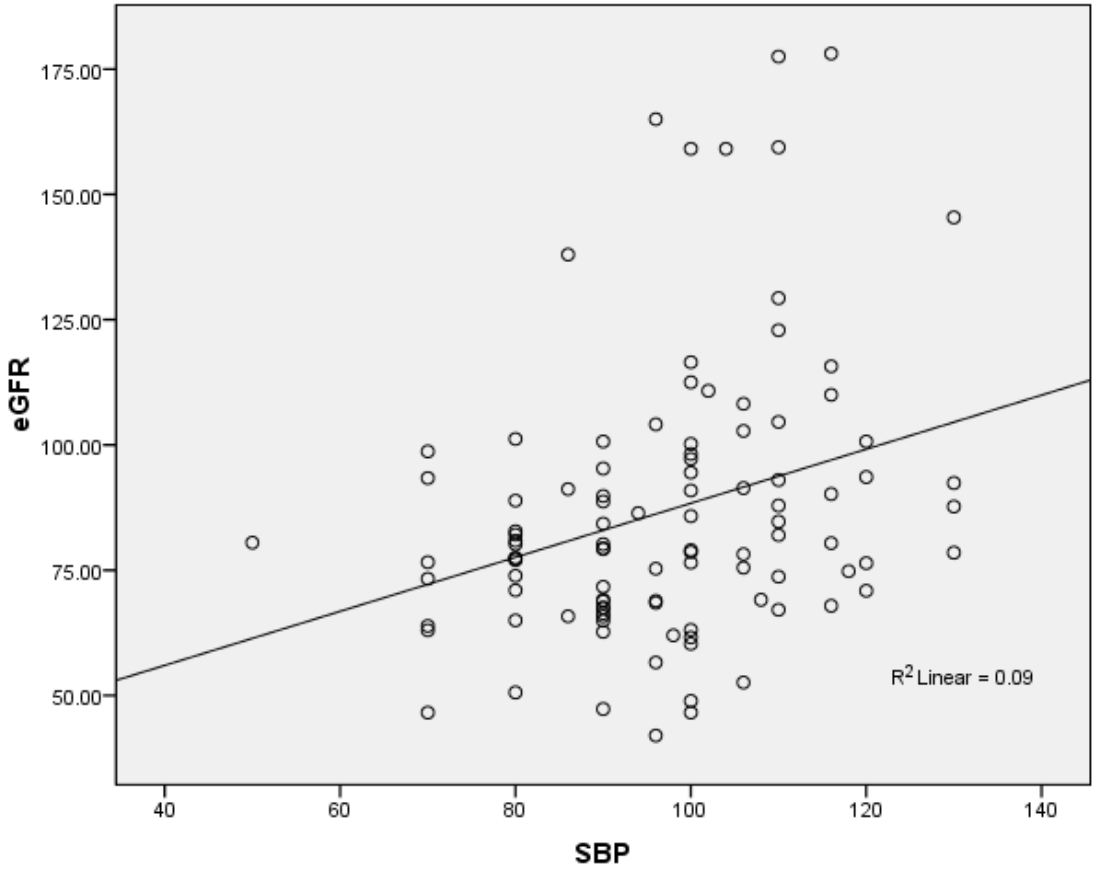
BMI vs eGFR


175.00
150.00
125.00
100.00
75.00
50.00
eGFR
10.00
12.00
14.00
16.00
18.00
20.00
22.00
24.00
Bmi
R2 Linear = 0.114

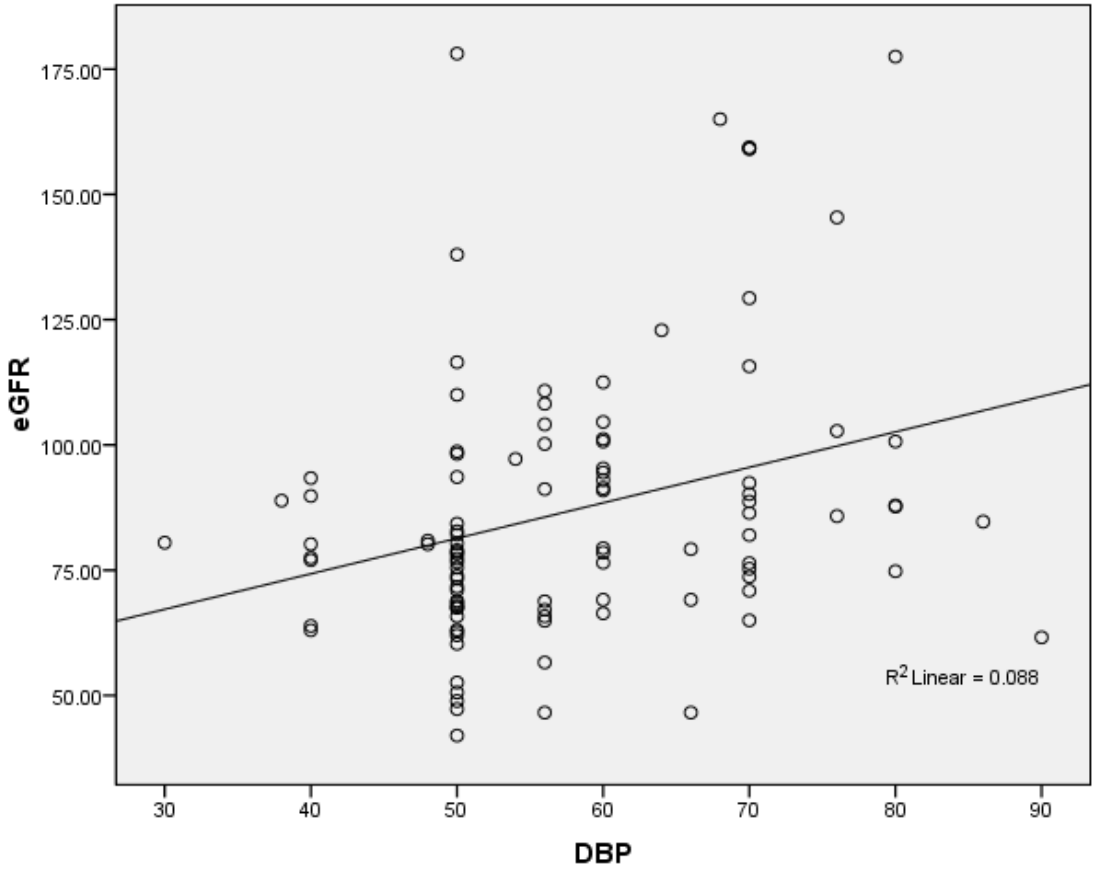
Inverse relationship between TC and eGFR



SBP vs eGFR


175.00
150.00
125.00
100.00
75.00
50.00
eGFR
40
60
80
100
120
140
SBP
R2 Linear = 0.09

DBP vs eGFR


175.00
150.00
125.00
100.00
75.00
50.00
eGFR
30
40
50
60
70
80
90
DBP
R2 Linear = 0.088

Conclusions

- There is an apparent high prevalence of CKD among paediatric population of Ondo State
- There is a high prevalence of risk factors among them
- Hypertension, obesity and dyslipidaemia showed a significant relationship to eGFR.

Recommendations

- Higher nos of subjects needed;
- Follow-up of subjects with established risk factors;
- Follow-up of subjects with reduced eGFR;
- Identify causes of reduced eGFR in them;
- Screening of siblings of subjects with risk factors and/or reduced eGFR.

KIDNEY CARE CENTRE ,ONDO

Laje Road Ondo, Ondo State

...Toward a better living

FEATURES:

FRIENDLY AND HIGHLY MOTIVATED STAFF
MULTI-PROFESSIONAL APPROACH TO PATIENT CARE
STATE-OF-THE-ART DIALYSIS SUITE
WORLD-CLASS MEDICAL WORDS FOR IN-PATIENT CARE
FULLY-AUTOMATED DIAGNOSTIC LABORATORY UNIT
MINI-CONFERENCE ROOM/LIBRARY

ENJOY OUR 3-PRONG APPROACH

- Primary Prevention of kidney disease
- Secondary Prevention / Dialysis
- Research

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Thank you