A Cross Sectional Study On Diagnostic Findings And Treatment Between Children And Adults Based On KDIGO Guidelines Of Nephrotic Syndrome

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ABSTRACT:
Aim and objectives: The aim of our study is, to study the clinical profile, investigation profile and treatmentplan in children and adults with nephrotic syndrome according to
KDIGO GUIDELINES.
Methods: This is a Prospective Observational Study and the subjects involved are thepatients visiting a pediatric department and nephrology department, diagnosed with anephrotic syndrome and with relapses. All the data of the subjects are collected by using the case proforma and the data collection includes demographic details,past medical history, past medication history, history investigations, personal habits,allergies, diagnosis, laboratory investigations and drug prescribed.
Results: In our study a total of 99 subjects were recruited among those paediatrics were 45 and adults were 54. On biochemical examination the sr. albumin profile shows hypoalbuminemia themajor hypoalbuminemia range is found among paediatrics N=45 with mean of 15 ie.,
>0.6mg/dl- 37(82.2%), followed by 0.2-0.6mg/dl -7 (15.5%), <0.2mg/dl-1 (2.2%) and adults N=54 with mean of 18 major hypoalbuminemia found at >0.6mg/dl -39(72.2%), followed by 0.2-0.6mg/dl-13 (24%), and <0.2-2 (3.7%)
On urine examination frothy appearance of urine was observed in almost patients of paediatrics and adults. Main treatment includes managing edema: Lasix; hypertension: nefidipine, enalapril, amlodipine, betablockers, telmisartan; corticosteroid therapy: tab.prednisolone, inj.methyl prednisolone; immunosuppressant: methotrexate, sulfasalazine, hydroxychloroquine, azathioprine; antibiotics: ceftriaxone, doxycycline, amoxyclav, other antibiotics; alkalysing agent: sodium bicarbonate; antacids: ranitidine;PPIs: pantoprazole.
Conclusion:- Our study concluded that, most of the children are with minimal change disease but in adults none were observed with MCD .Most of the adults are diagnosed with secondary cause (FSGS).In adults mostly in females lupus nephritis were observed .Hypertension is one of the complication mostly seen in pediatrics.

Key Words: KDIGO, Nephrotic syndrome, MCD, FSGS, PPI, Department of pharmacy practice, CESCOP.

INTRODUCTION:

Nephrotic syndrome is a group of symptoms that indicates your kidneys are not working properly, the symptoms include proteinuria, hypoalbuminemia, swelling of body parts, hyperlipidemia. Usually nephrotic syndrome is abnormal condition, marked due to altered permeability of glomerular basement membrane, glomeruli are inflamed allowing too much protein to leak from your blood in to urine. Treatment , includes -corticosteriods ,diuretics ,anti-hypertensives ,in severe/frequent relapse conditions/autoimmune conditions-methotrexate are used.

RESEARCH METHODOLOGY:

STUDY SETTING: The study was conducted in viswabharathi super specialty hospital, Gayathri estate, Kurnool,Andhra Pradesh, India.
STUDY DESIGN: Cross sectional study
STUDY PERIOD: This study was performed in Six months
STUDY POPULATION: Sample -99 patients.
STUDYCRITERIA:
Inclusion criteria:

1. Children who are diagnosed with nephrotic syndrome
- Infants > 5 months
- Early childhood: 2-5 years
- Middle childhood: 6-11 years
- Early adolescents : 12-18 years
- Late adolescents : 19-21 years
- 12-18 adolescents

2. Adults who are diagnosed with nephrotic syndrome (>21years)
3. children and adults with relapse condition

4. Patients who are coming for regular follow-up with nephrotic syndrome.
5. Children and adults with steroid resistance nephrotic syndrome

Exclusion criteria:

- Infants < 5 months
- Pregnant and breast feeding women
- Patients who does not willing to participant.

MATERIALS: Data collection proforma

METHOD OF THE STUDY:

The study was started with the selection of subjects based on the inclusion criteria and exclusion criteria followed by collection of all the required parameters of the patients using self-prepared structural patient data collection proforma which includes patient's demographics, medication history, personal history, lab investigations and current treatment and also all available data from the patients.

All the data of the subjects are collected by using the case proforma with respect to history examination and investigation.

RESULTS:

A comparative study was conducted in viswabharathi super specialty hospital Kurnoolfor a period of six months. A total of 99 subjects were recruited as per inclusion andexclusion criteria.

PATIENT DISTRIBUTION BASED ON GENDER:

In our study a total of 99 subjects were recruited among those pediatrics were 45 and adults were 54 among pediatrics males were 26 and females were 19, among adults males were 27 and females were 27.

GENDER	NO OF PATIENTS	PERCENTAGE
MALES	26	57.7%
FEMALES	19	42.2%
MEAN	22.5	

Table no: 6.1 Gender wise distribution of paediatrics:

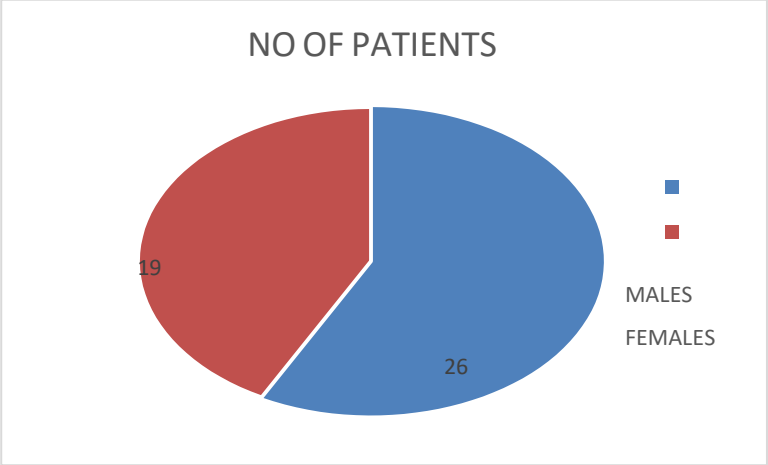


Figure no: 6.1 Graphical representation of gender distribution of paediatrics:

GENDER	NO OF PATIENTS	PERCENTAGE
Males	27	50%
Females	27	50%
MEAN	27	

Table no: 6.1.1 Gender wise distribution of adults

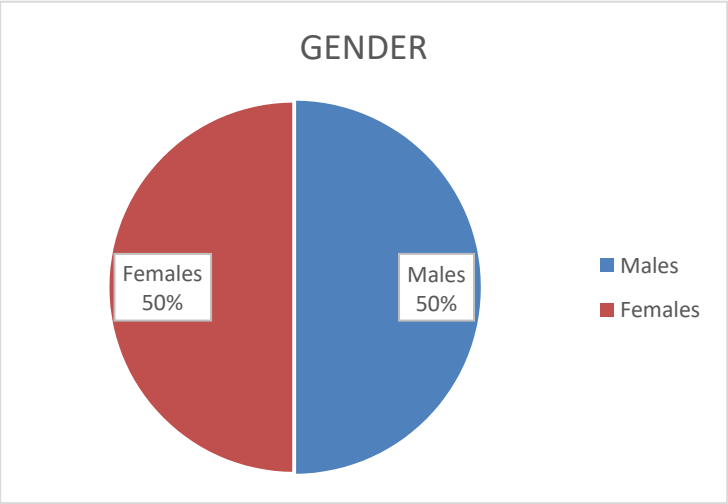


Figure no: 6.1.1 Graphical representation of gender distribution of adults

6.1 DISTRIBUTION OF PATIENTS BASED ON THE AGE AND GENDER AMONGPEDIATRICS AND ADULTS:

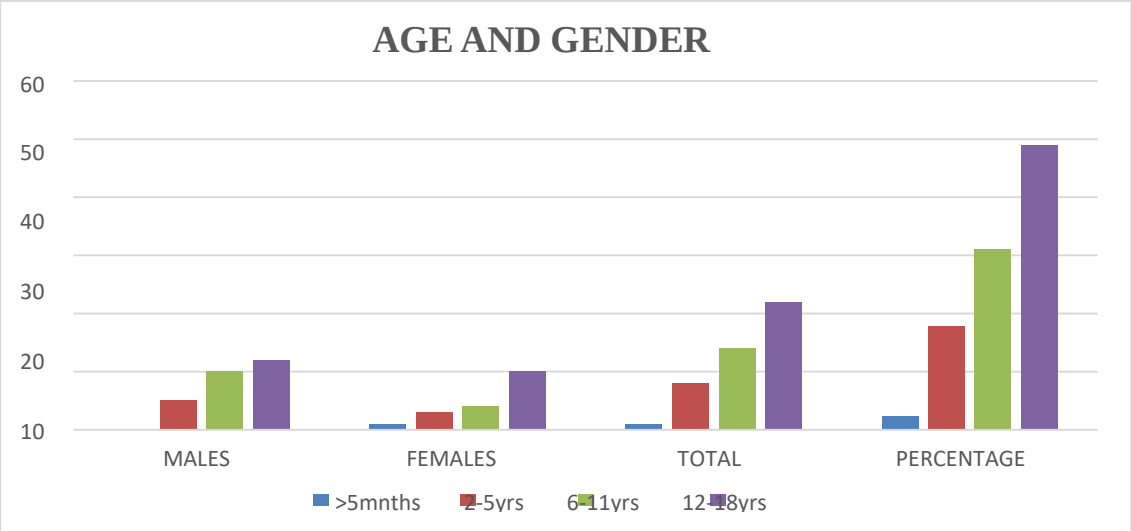


Figure no 6.2.1: Graphical representation of patients based on the gender amongpediatrics

In age wise distribution of population involved in this study (N=99),among paediatrics major age group involved was 12-18yrs-22 (48%) followed by 6-11yrs-14 (31%) and 2-5yrs-8 (17%) and >5mnths-1(2%) placed in the group. Among adults major age group involved was 20-40yrs-38 (70.37%) followed by 40-60yrs-14 (25.92%) and 60-80yrs-2 (3.37%). Table and figure 6.2.1 and 6.2.2 provided the details of patients age distribution based on gender among 99 patients with 45 paediatrics and 54 adults respectively

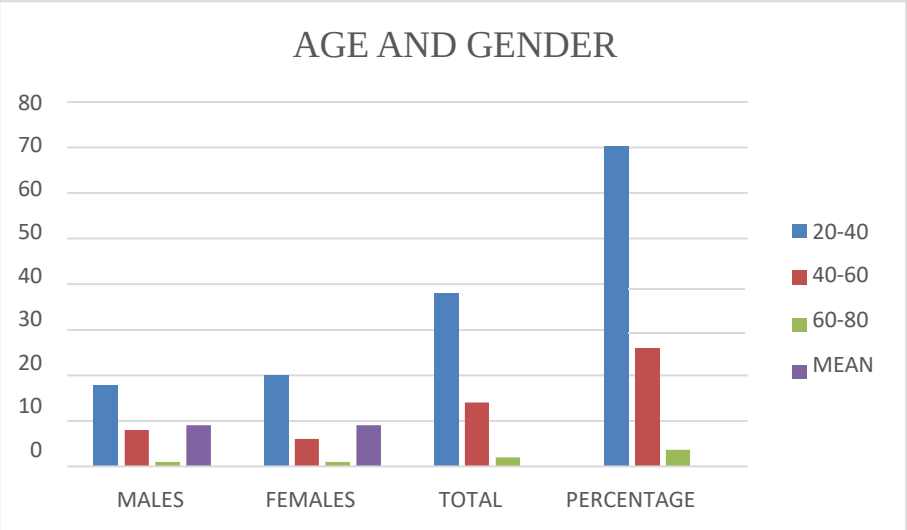


Figure no 6.2.2: Graphical representation of patients based on the gender among adults

DISTRIBUTION OF PATIENTS WITH SYMPTOMS AMONG PEDIATRICS AND ADULTS:

The most common symptoms were among paediatrics and adults includes facialpuffiness-35 and 33 (77.7%) and (61.1%), periorbital edema-10 and 4 (22.2%) and (7.4%),decreased urine output-9 and 9 (20%) and (16.6%), fever-7 and 6(15.5%) and (11.1%),generalised edema-14 and 13(31.1%) and (24%), pedal edema- 29 and 37 (64.4%) and (68.5%), burning micturition- 3 and 2 (6.6%) and (3.7%), abdominal distension-18 and 18(40%)(18.5%), vomitings-4 and 6 (8.8%) and (11.1%), fast breathing- 3 and 8 (6.6%) and (14.8%) respectively. Other symptoms in adults includes generalised body pains-9 (16.6%), polyarthralgia-6 (11.1%), cough-4 (7.4%), frothy urine-10 (18.5%), rashes-5 (9.25%). Table and figures 6.3.1 and 6.3.2 shows distribution of patients as per the symptoms.

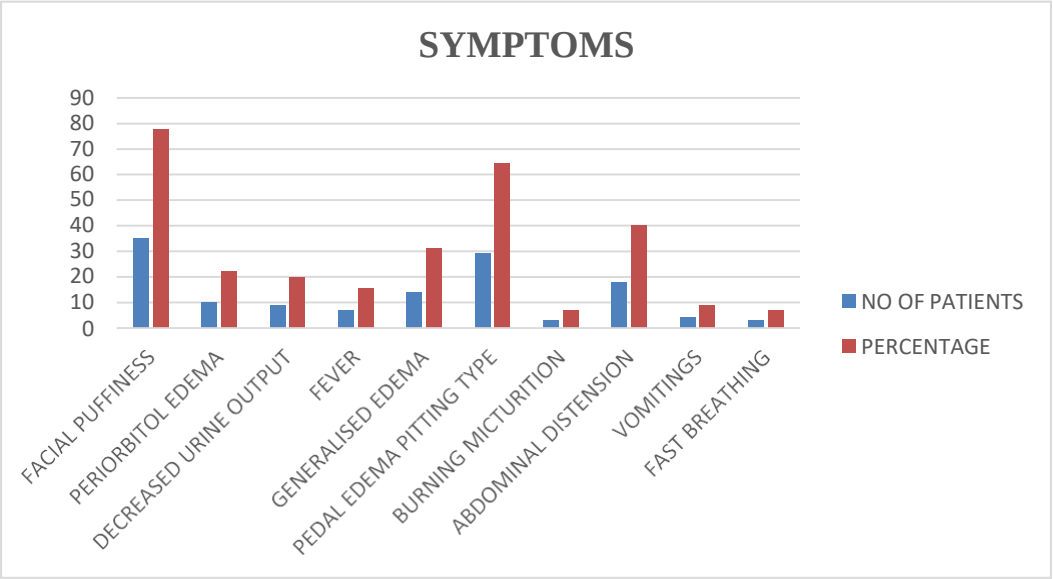


Figure no: 6.3.1 Graphical representation of patients as per the symptoms among pediatrics

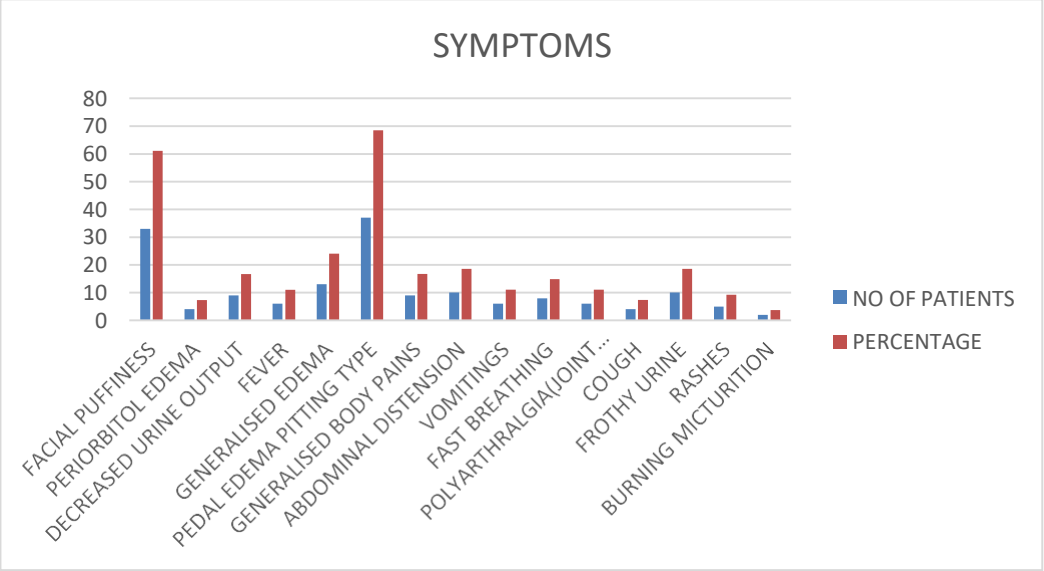


Figure no: 6.3.2 Graphical representation of patients as per the symptoms among adults

INVESTIGATIVE PROFILE OF NEPHROTIC SYNDROMEAMONG PEDIATRICS AND ADULTS:

On investigation systolic BP range is between 170-90mmHG with the mean of 128.8, diastolic BP range is between 100-60mmHG with mean of 85.8, HB range is 16.1-5.4gm/dl with mean of 10.9, Serum sodium range of 145-130mmol/L with mean of 136.8, Serum potassium range is 5-3.4mmol/L with mean of 4.06, Serum chlorides range is between 106- 92mmol/L with mean of 97.8, Serum albumin range is 4.1-1.2mg/DL with mean of 1.6, Serum creatinine range is 2.5- 0.4mg/DL with mean of 0.83, WBC range is 33300- 300cells/cumm with mean of 10392.8, Urinary PCR range of 25.3 – 0.3 with mean of 8.14 .

PARAMETER	RANGE	MEAN
SYSTOLIC BP	170-90mmHg	128.82
DIASTOLIC BP	100-60mmHg	85.88
HAEMOGLOBIN	16.1-5.4g/dl	10.95
SERUM SODIUM	145-130mg/dl	136.84
SERUM POTASSIUM	5-3.4mg/dl	4.06
SERUM CHLORIDES	106-92mg/dl	97.87
SERUM ALBUMIN	4.1-1.2mg/dl	1.61
SERUM CREATININE	2.5-0.4mg/dl	0.83
WBC	33300-300cells/cumm	10392.8
URINARY PCR	25.3-0.3	8.14

PARAMETER	RANGE	MEAN
HAEMOGLOBIN	18.8-4.1	10.46
SERUM SODIUM	146-121	137.92
SERUM POTASSIUM	5.9-3	4.05
SERUM CHLORIDES	130-6.6	95.55
SERUM ALBUMIN	3.7-1.9	1.41
SERUM CREATININE	6.9-0.4	1.38
WBC	15.9-2.2	8.83
URINARY PCR	12.87-0.3	3.47

Table no 6.4.1 Investigative profile of Nephrotic syndrome among pediatrics

Table no.6.4.1 investigative profile of nephrotic syndrome in adults

6.1.2 Hemoglobin profile among pediatrics:

The major hemoglobin range among pediatrics (N=45) with mean of 11.25 is foundbetween 8.6-10.6 with 20 cases followed by >12.6mg/dl is 14 cases, 10.6-12.6 is 10 cases,
<8.6 is 1 case and among adults N=54 the hemoglobin range is found normal.

IOGLOBINRANGE	NO OFCASES	PERCENTAGE
<8.6	1	2.2%
8.6-10.6	20	44.4%
10.6-12.6	10	22.2%
>12.6	14	31.1%
MEAN	11.25	

Table no: 6.4.2: Hemoglobin profile in pediatrics

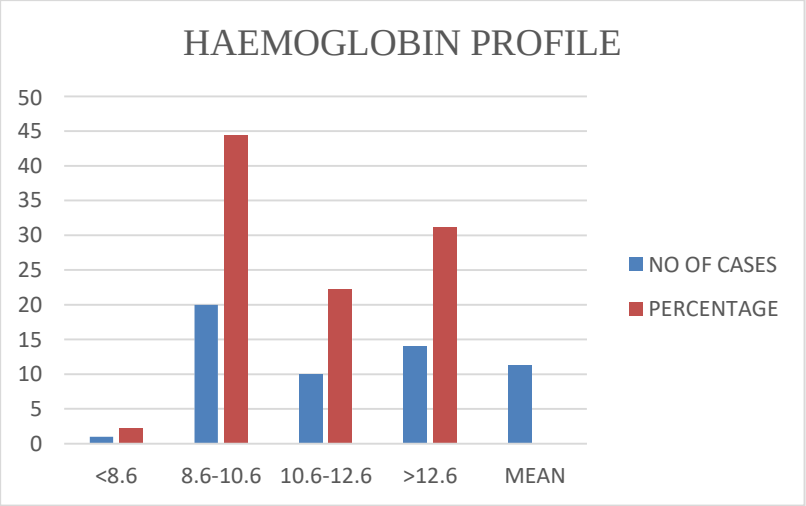


Figure no: 6.4.2: graphical representation of haemoglobin profile

6.1.3 Serum. Albumin profile among pediatrics and adults:

On biochemical examination the sr. albumin profile shows hypoalbuminemia themajor hypoalbuminemia range is found among paediatrics N=45 with mean of 15 ie.,
>0.6mg/dl- 37(82.2%), followed by 0.2-0.6mg/dl -7 (15.5%), <0.2mg/dl-1 (2.2%) and adults N=54 with mean of 18 major hypoalbuminemia found at >0.6mg/dl -39(72.2%), followed by 0.2-0.6mg/dl-13 (24%),and <0.2-2 (3.7%)

M ALBUMINRANGE	NO OF CASES	PERCENTAGE
<0.2	1	2.2%
0.2-0.6	7	15.5%

>0.6	37	82.2%
MEAN	15	

Table no: 6.4.3 Serum. Albumin profile among pediatrics

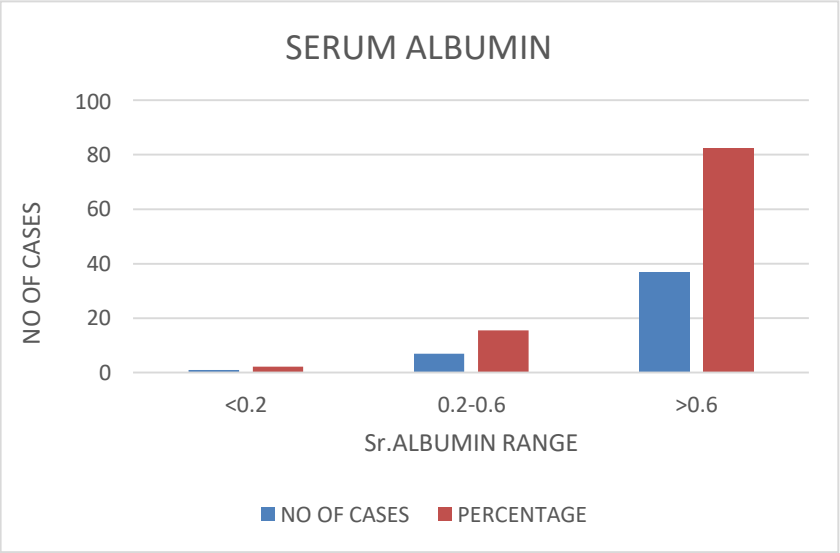


Figure no: 6.4.3 Graphical representation of Serum. Albumin among pediatrics:

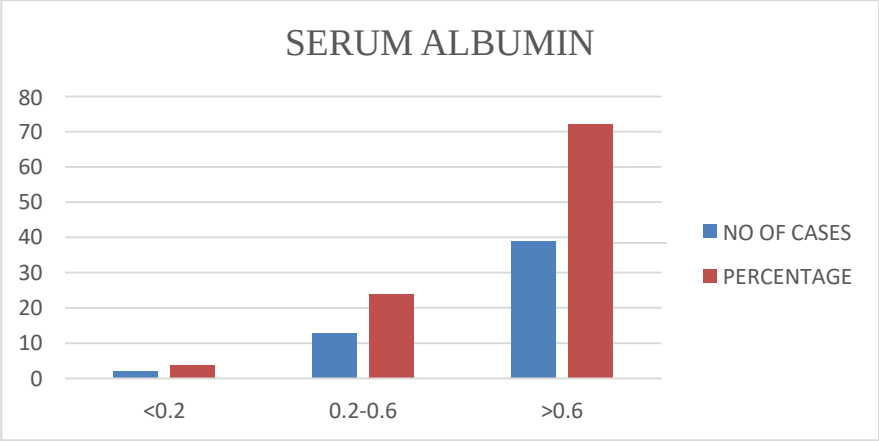


Figure no: 6.4.3 Graphical representation of Serum. Albumin among adults

6.5 ANALYSIS OF URINARY PARAMETERS AMONG PEDIATRICS ANDADULTS:

On urine examination frothy appearance of urine was observed in almost patients of paediatrics and adults. On urinary microscopy among paediatrics haematuria was found in 11patients (25%), in adults 6 patients(11.1%). Among paediatrics urine albumin was 1+(<100mg/dl) in 0 cases and 2+(100-300mg/dl) in 7 (15.9%) cases and 3+(300-1000mg/dl) in 20 (45.4%) cases and 4+(>1000mg/dl) in 13 (29.5%) cases 5+ in 4 (9%) cases. In adults
1+(<100mg/dl) in 0cases, 2+(100-300mg/dl) in 5 (9.2%) cases, 3+ (300-1000mg/dl) in 18 (33.3%) cases, 4+ (>1000mg/dl) in 31 (57.4%) cases.

URINARY PARAMETERS	NO OF CASES	PERCENTAGE
(<100mg/dl)1+	0	0
(100-300mg/dl) 2+	7	15.9%
(300-1000mg/dl)3+	20	45.4%
(>1000mg/dl)4+	13	29.5%
ALBUMIN 5+	4	9.0%
HEMATURIA	11	25%
MEAN	9.16	

Table no: 6.5.1 Analysis of urinary parameters among pediatrics

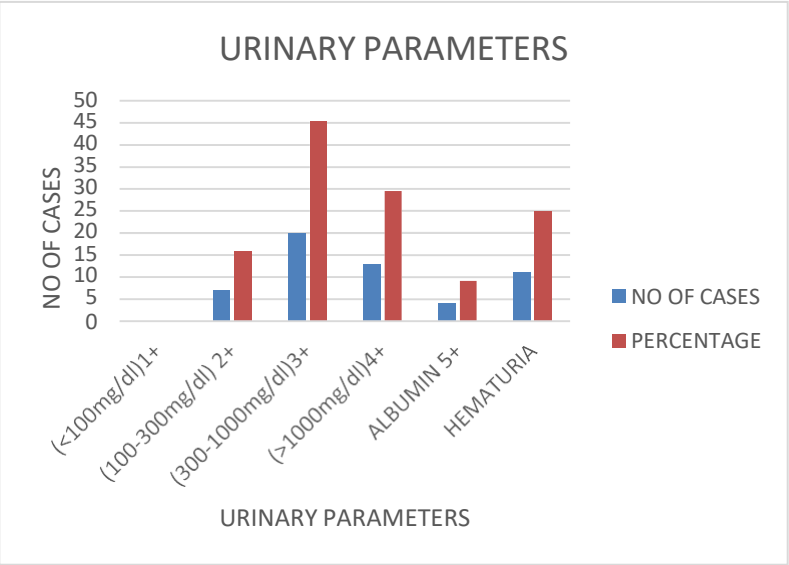


Figure no: 6.5.1 Graphical representation of urinary parameters among pediatrics

URINARY PARAMETERS	NO OF CASES	PERCENTAGE
ALBUMIN 1+	0	0
ALBUMIN 2+	5	9.2%
ALBUMIN 3+	18	33.3%
ALBUMIN 4+	31	57.4%
HEMATURIA	6	11.1%
MEAN	12	

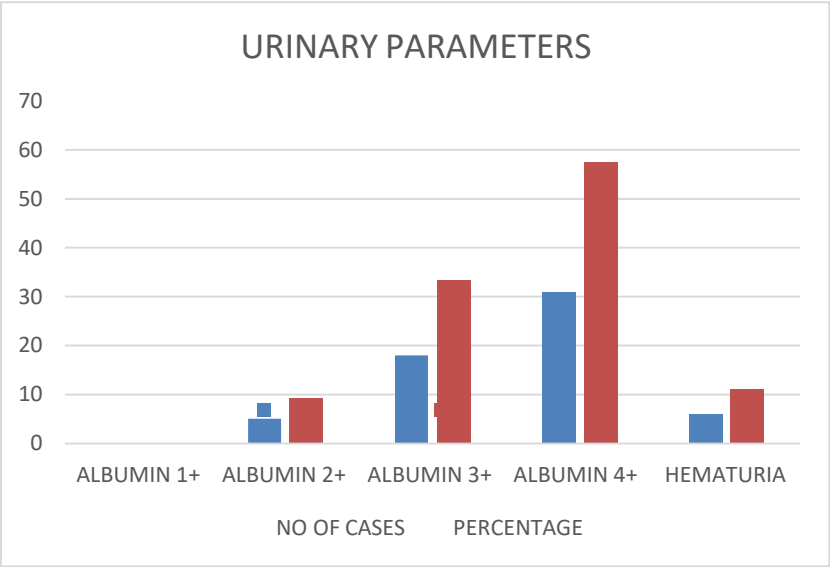


Figure no: 6.5.2 graphical representation of urinary parameters among adults

6.6 ANALYSIS OF URINARY PCR AMONG PEDIATRICS AND ADULTS:

On analysis of urinary PCR among paediatrics N=45 with mean of 11 the urinary PCR range majorly found at >3.5mg/dl-30 (68.1%), followed by <1.6mg/dl-8 (18.1%), 1.7-
2.5 and 2.6-3.5- 3 and 3 (6.8%) respectively. Among adults the urinary PCR was less compared with paediatrics major PCR range found at <3.5mg/dl (57.4%), followed by 3.5- 5.5mg/dl -16(29.6%), 5.5-7.5mg/dl-5 (9.25%), no cases at 7.5-9.5mg/dl, 9.5-11.5mg/dl-1(1.8%), >11.5mg/dl-1 (1.8%). Table and figures 6.6.1 and 6.6.2 respectively shows representation.

URINARY PARAMETERS	NO OF CASES	PERCENTAGE
ALBUMIN 1+	0	0
ALBUMIN 2+	5	9.2%
ALBUMIN 3+	18	33.3%
ALBUMIN 4+	31	57.4%
HEMATURIA	6	11.1%
MEAN	12	

Table no 6.5.1 urinary parameters among adults

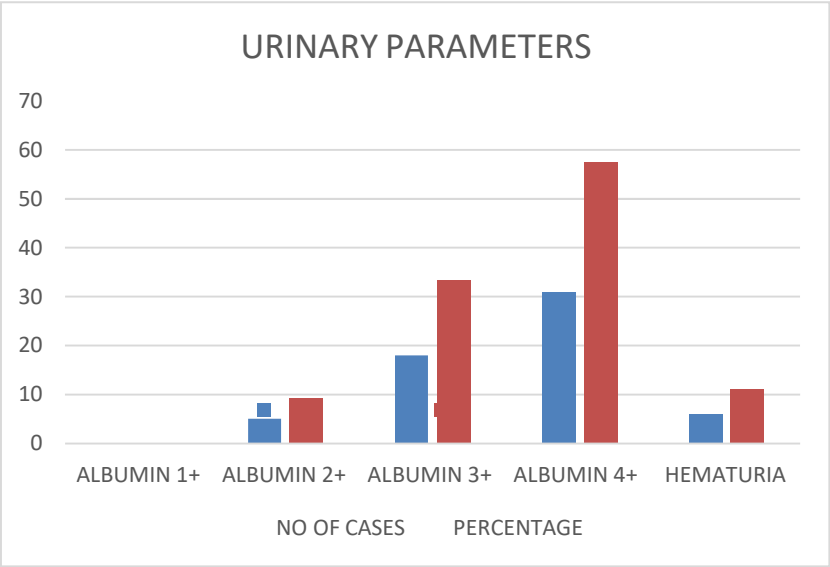


Figure no: 6.5.2 graphical representation of urinary parameters among adults

6.7 ANALYSIS OF URINARY PCR AMONG PEDIATRICS AND ADULTS:

On analysis of urinary PCR among paediatrics N=45 with mean of 11 the urinary PCR range majorly found at >3.5mg/dl-30 (68.1%), followed by <1.6mg/dl-8 (18.1%), 1.7-2.5 and 2.6-3.5- 3 and 3 (6.8%) respectively. Among adults the urinary PCR was less compared with paediatrics major PCR range found at <3.5mg/dl (57.4%), followed by 3.5- 5.5mg/dl -16(29.6%), 5.5-7.5mg/dl-5 (9.25%), no cases at 7.5-9.5mg/dl, 9.5-11.5mg/dl-1(1.8%), >11.5mg/dl-1 (1.8%). Table and figures 6.6.1 and 6.6.2 respectively shows representation of urinary PCR.

INARYPCR	NO OFCASES	PERCENTAGE
<1.6	8	18.1%
1.7-2.5	3	6.8%
2.6-3.5	3	6.8%
>3.5	30	68.1%
MEAN	11	

Table no: 6.6.1 analysis of urinary PCR in pediatrics

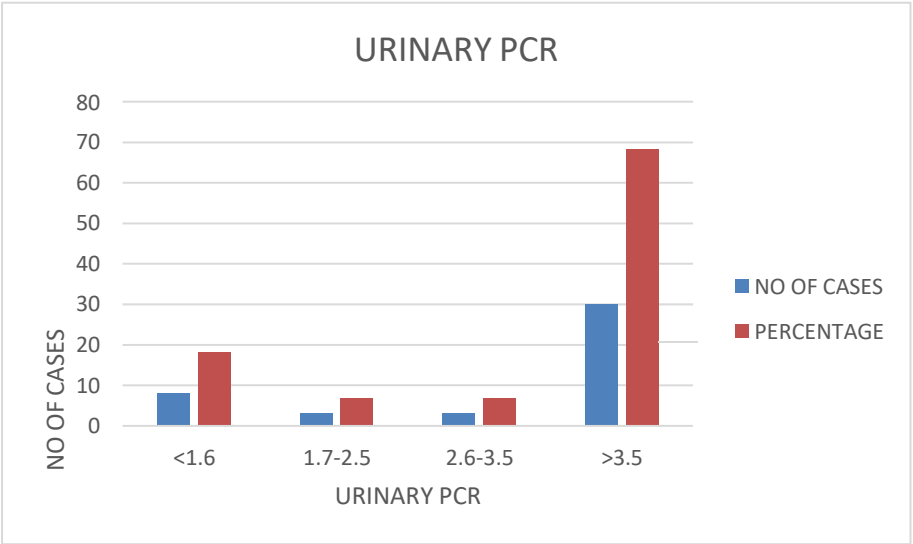
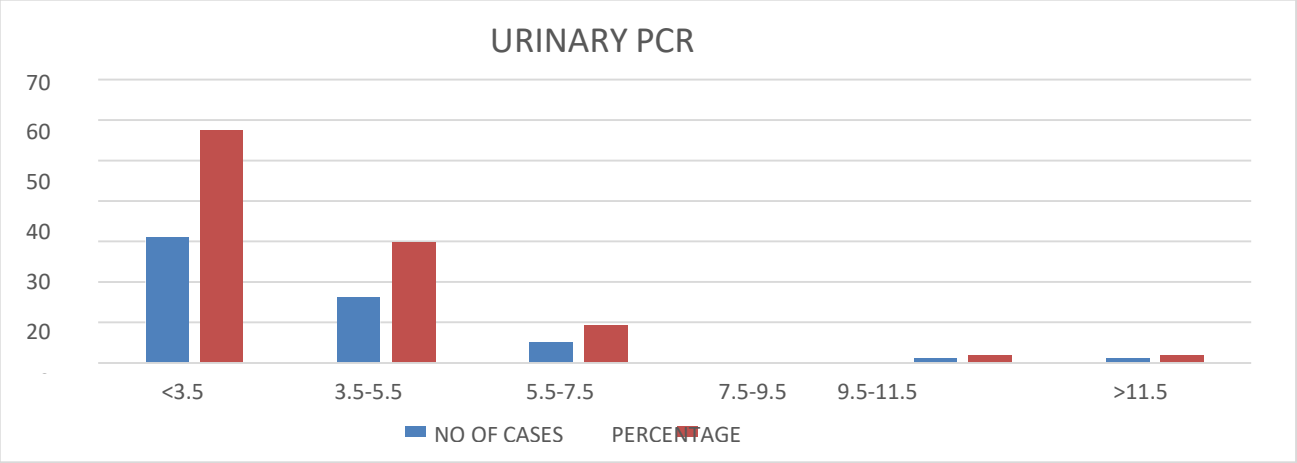


Figure no: 6.6.2 graphical representation of urinary PCR among pediatrics

INARYPCR	NO OF CASES	PERCENTAGE
<3.5	31	57.4%
3.5-5.5	16	29.6%
5.5-7.5	5	9.2%
7.5-9.5	0	0
9.5-11.5	1	1.8%
>11.5	1	1.8%
MEAN	9	

Table no: 6.6.1 analysis of urinary PCR among adults
Figure no: 6.6.2 graphical representation of urinary PCR among adults



6.7 TYPES OF NEPHROTIC SYNDROME BASED ON BIOPSY REPORTS AMONGPEDIATRICS AND ADULTS:

In paediatrics many cases are found to be idiopathic nephrotic syndrome which is called as minimal change disease. In adults, type of nephrotic syndrome is concluded based on biopsy reports.

TYPE OF NEPHROTIC SYNDROME	NO OF CASES	PERCENTAGE
MINIMAL CHANGE DISEASE	34	77.2%
LUPUS NEPHRITIS	2	4.5%
FOCAL SEGMENTAL GLOMERULO SCLEROSIS	4	9.0%
MEMBRANOUSNEPHROPATY	2	4.5%
STEROID DEPENDENT NEPHROTICSYNDROME	2	4.5%
MEAN	8.8	

In paediatrics (N=45) with mean of 8.8 majorly minimal change disease is observedin 34 cases(72.2%), lupus nephritis 2 (4.5%), focal segmental glomerulosclerosis4 (9%), membranous nephropathy-2 (4.5%), steroid dependent nephrotic syndrome-2 (4.5%).

In adults N= 54 with mean of 6.7 majorly focal segmental glomerulosclerosis-19 (35.1%) was observed, lupus nephritis-

15 (27.7%), without biopsy-10(18.5%), membranous nephropathy-7 (12.9%), steroid dependent nephrotic syndrome-1(1.8%), IRGN-1 (1.8%),Amyloid nephropathy-1(1.8%)

TYPE OF NEPHROTIC SYNDROME(BIOPSY)	NO OF CASES	PERCENTAGE
MINIMAL CHANGE DISEASE	0	0
LUPUS NEPHRITIS	15	27.7%
FOCAL SEGMENTAL GLOMERULO SCLEROSIS	19	35.1%
MEMBRANOUS NEPHROPATY	7	12.9%
STEROID DEPENDENT NEPHROTIC SYNDROME	1	1.8%
WITHOUT BIOPSY	10	18.5%
IRGN	1	1.8%
AMYLOID NEPHROPATHY	1	1.8%
MEAN	6.75	

Table no: 6.7.1 types of nephrotic syndrome among pediatrics

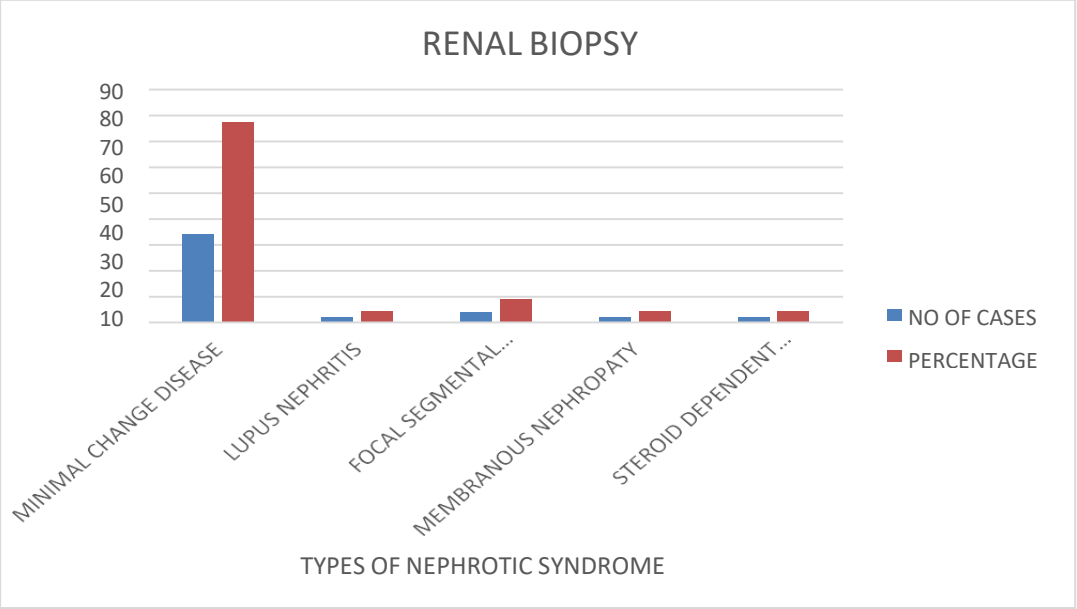
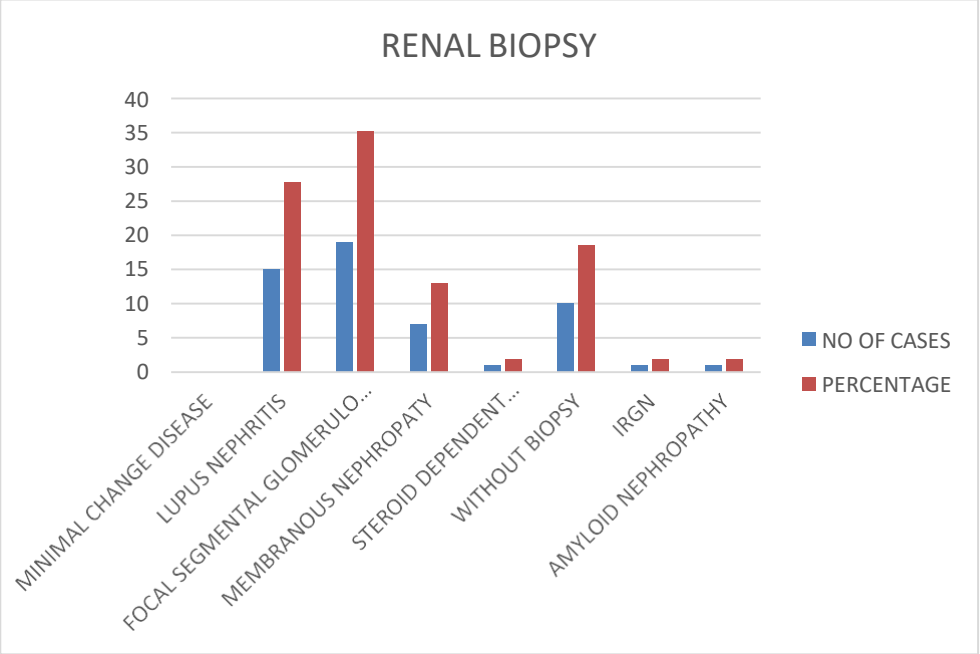


Table no: 6.7.1 types of nephrotic syndrome among pediatrics.

Figure no: 6.7.2 graphical representation of types of nephrotic syndrome based onbiopsy in adults



6.8 TREATMENT OF NEPHROTIC SYNDROME AMONG PEDIATRICS ANDADULTS:

Based on symptoms ie., managing edema : Lasix-30, salt restriction diet-45; hypertension: nefidipine-10,amlodipine-6, enalapril-2, labetalol-1, telmisartan-4; corticosteroid therapy: tab.prednisolone-30, inj.methyl prednisolone-11, inj.hydrocortisone-1;imunosupressant: mycophenolate mofetil-1; steroid sensitive: tacrolimus-2; sepsis: piptaz-1, ceftriaxone-30, erythromycin-1, amoxyclav-2, vancomycin-1; antacids: ranitidine-20; PPIs: pantoprazole-15.

In adults managing edema: Lasix 30; hypertension: nefidipine-9, enalapril-4, amlodipine-8, betablockers-9, telmisartan-9; corticosteroid therapy: tab.prednisolone-24, inj.methyl prednisolone-25; immunosuppressant: inj.methotrexate-1, sulfasalazine-1, hydroxychloroquine-13, azathioprine-1; sepsis: ceftriaxone-32, doxycycline-2, amoxyclav-3, other antibiotics-3; alkalysing agent: sodium bicarbonate-8; antacids: ranitidine-37;PPIs: pantoprazole-7.

SYMPTOMS	TREATMENT REGIMEN	NO OF PATIENTS
managing edema	lasix	30
	salt restriction diet	45
hypertension	nefidipine	10
	amlodipine	6
	enalapril	2
	labetalol	1
	telmisartan	4
corticosteroid therapy	tab.prednisolone	30
	inj.methyl prednisolone	11
	inj.Hydrocortisone	1
immuno suppressent	mycophenolate mofetil	1
steroid sensitive	tacrolimus	2
sepsis	piperacillin-tazobactum	1

	erythromycin	1
	amoxicillin clavulonate	2
	vancomycin	1
antacids	ranitidine	20
proton pump inhibitors	pantoprazole	15
	ceftriaxone	30

Table no:6.8.1 treatment of nephrotic syndrome in pediatrics

SYMPTOMS	TREATMENT REGIMEN	NO OF PATIENTS
managing edema	lasix	30
	salt restriction diet	
hypertension	nefedipine	9
	enalapril	4
	amlodipine	8
	beta blockers	9
	telmisartan	9
corticosteroid therapy	tab.prednisolone	24
	inj.methyl prednisolone	25
immuno suppressent	inj.methotrexate	1
	suifasalazine	1
	hydroxychloroquine	13
	azathioprine	1
sepsis	piperacillin-tazobactum	2
	ceftriaxone	32
	doxycycline	2
	amoxicillin clavulonate	3
	other antibiotics	3
Alkalizing agent	sodium bicarbonate	8
Antacids	ranitidine	37
proton pump inhibitors	pantoprazole	7

Table no: 6.8.1 treatment of nephrotic syndrome in adults.

DISCUSSION

- In our study, there are total of 45 pediatric patients (N=45) in which males are more innumber 26 and remaining are females 19 with mean of 22.5. it is in accordance with the **41** study" "clinical profile of nephrotic syndrome in children performed by sahana k.s et. Al that males are more in number compared to females.
- In our study, there are total of 54 adults patients (N=54) in which males 27 and females27 with mean of 27.
- In our study, the most common symptoms of pediatrics are facial puffiness-35(77.7%), followed by pedal edema- 29(64.4%), decreased urine output-9(20%), generalized edema-14(31.1%), abdominal distension-18(40), fever-7(15.5%); in other studies[42] "A study of clinical profile and associated factors of nephrotic syndrome in children at tertiary health care center performed by rajendra NP, amdeopatil et.al" shows common symptoms like facial puffiness(65.6%), abdominal distension (46.8%), genital edema(37.5%), decreased urine output(34.3%).
- In the present study, the most common symptoms of adults are pedal edema(pitting type) 37(68.5%) cases, followed by facial puffiness 33(61.1%) cases, generalized edema 13(24.0%) cases, frothy urine and abdominal distension 20(18.5%) cases, body pains and decreased urine output 18(16.6%) cases, fast breathing 8(14.8%)cases, fever, vomitings, joint pains 18(11.1%)cases, rashes 5(9.2%)cases, cough and per orbital edema8(7.407%)cases, burning maturation2(3.7%)cases.
- In our study, biochemical investigations in pediatrics shows serum creatinine ranges from 2.4-0.4mg/dl with mean of 0.83mg/dl and hypoalbuminemia, were present in almostall cases.; it is similar with the study[41] "clinical profile of nephrotic syndrome in children performed by sahana k.s et. al"states that serum creatinine mean value was 0.63mg/dl and hypoalbuminemia, were present in all cases.
- In our study, biochemical investigations in adults shows serum creatinine ranges from 0.9-6.4mg/dl an d hypo albuminea, were present in almost all cases.
- In our study, systolic BP in pediatrics ranges between 170-90mmHg with meanof128.82mmhg and diastolic BP ranges between 100-60mmHg with mean of85.88mmhg ;it is according with the study;[43] "clinical profile of children with nephrotic syndrome at a tertiary hospital in north central nigeri a performed by aliyu OA et.al"that systolic BP mean value is 103.3 and diastolic BP mean is 71.7
- In our study, hemoglobin in pediatrics ranges between 8.6-12.6g/dl with mean hemoglobin of 11.25 g/dl; it is similar to the study[43]"clinical profile of children with nephrotic syndrome at a tertiary hospital in north central Nigeria performed by aliyu OA et.al"that hemoglobin mean value is 10.3g/dl.
- In our study, hemoglobin in adults ranges between 4.1-18.8g/dl with mean hemoglobin of10.46g/dl.
- In our study, serum sodium in pediatrics ranges between 145-130 mmol/L with **43** mean136.84 mmol/L; but in another study "clinical profile of children with nephrotic syndrome at a tertiary hospital in north central nigeria performed by aliyu OA et.al"showsthe serum sodium mean value as mg/dl.
- In our study, serum sodium in adults ranges between 121-146mmol/lit with mean of137.92mmol/lit. In our study, serum potassium in pediatrics ranges between 5-3.4 mmol/lit with mean 4.06 mmol/lit ; but in another study[43] "clinical profile of children with nephrotic syndrome at a tertiary hospital in north central nigeria performed by aliyu OA et.al"shows the serum sodium mean value as 139mg/dl.
- In our study, serum potassium in adults ranges between 3-5.9mmol/lit with mean of 4.05mmol/lit.
- In our study, serum chloride in pediatrics ranges between 106-92 with mean97.87 **43** mmol/L; but in another study "clinical profile of children with nephrotic syndrome at a tertiary hospital in north central nigeria performed by aliyu OA et.al"shows the serumsodium mean value as 139mmol/lit.
- In our study, serum chloride in adults ranges between 6.6-130mmol/lit with mean of95.55mmol/lit.
- In our study, serum albumin range was between 4.1-1.2mg/dl with mean 15mg/dl; but in **44** another study "A prospective study on management of nephrotic syndrome in pediatrics in a tertiary care teaching hospital in Thiruvananthapuram performed by kiron ss et.al" shows that >100mg/dl were seen in 22.9% cases and followed by >300mg/dl were seen in15.7% cases.
- In our study, serum albumin in adults ranges between 1.9-3.7g/dl with mean of 1.41g/dl.
- In our study, protein/creatinine ratio in a spot sample of urine was in the range of 0.3-25.3 with mean value of 11,it is similar to the study[41] "clinical profile of nephrotic syndrome in children performed by sahana k.s et. al "were mean protein/creatinine ratio was 13.4.
- In our study, protein/creatinine ratio in adults ranges between 0.3-12.87mg/dl.
- In other study,[41] "clinical profile of nephrotic syndrome in children performed by sahana k.s et. al" shows hematuria in 10.6% cases but in our study, hematuria was seen in 25% cases in pediatrics and 11.11% hematuria was seen in adults.
- In our study, urine albumin in pediatrics shows 1+(<100mg/dl) in0 (0%)cases and 2+(100-300mg/dl) in 7(15.9%)cases and 3+(300-1000mg/dl) in 20 (45.4%) cases and 4+(>1000mg/dl) in 13(54.%)cases albumin5+in 4(9.0%) cases; but in another study[44]"A prospective study on management of nephrotic syndrome in pediatrics in a tertiary care teaching hospital in

Thiruvananthapuram performed by kiron ss et.al" shows that >100mg/dl were seen in 22.9% cases and followed by >300mg/dl were seen in 15.7% cases.

- In our study, urine albumin in adults shows 1+(100mg/dl) in 0(0%)cases, 2+(100- 300mg/dl) in 5(9.2%)cases, 3+(300-1000mg/dl) in 18(33.3%)cases, and 4+(>1000mg/dl) in 31(57.4%)cases.
- In our study, the type of nephrotic syndrome in paediatrics shows minimal change disease34 (77.2%) cases, focal segmental glomerulo sclerosis 4(9.0%) cases, lupus nephritis 2(4.5%)cases, membranous nephropathy 2 (4.5%) cases, steroid dependent **45**
nephrotic syndrome 2(4.5%); but in another our Study " clinical profile and complication of nephrotic syndrome in a tertiary health care center in central India performed by avyact agarwal et.al" states that 88.8% patients were steroid sensitive and 11.2% were steroid resistance.
- In our study, type of nephrotic syndrome in adults shows minimal change disease 0(0%)cases, lupusephritis 15(27.7%)cases, focal segmental glomerulo sclerosis 19(35.1%)cases, membranous nephropathy7(12.9%)cases, steroid dependent nephrotic syndrome 1(1.8%)cases, IRGN 1(1.8%) cases, amyloid nephropathy 1(1.8%)cases and without biopsy 10(18.5%)cases.
- In our study, treatment regimen in pediatrics: Tab. Or inj Lasix (30patients) and saltrestriction diet (45patients) given to managing edema. Tab.nefidipine (10patients), Tab.Amlodipine (6patients), Tab.Enalapril (2patients), Tab.Labetalol (1patients),Tab.Telmisortan (4patients) given to treat hypertension. Tab prednisolone (30patients), inj.Methylprednisolone (11patients), inj.Hydrocortisone (1patient) given to treat inflammation (corticosteroid therapy). Tab. Mycophenolate mofetil (1 patient) given to prevent organ transplantation rejection (immunosuppressant), Tab.Tacrolimus (2patients)treat steroid sensitivity. Inj.Piperacilline-tazobactam (1patient), inj.ceftriaxone(30patients), Tab.erythromycin (1patient), inj.amoxicillin clavulonate (2patient),inj.vancomycin (1patient) given to treat sepsis. inj.Or Tab.ranitidine (20patients) given totreat acidity (antacid), inj. Or Tab. Pantoprazole (15patients) given to treat acidity (protonpump inhibitor).
- In our study, treatment regimen in adults: Tab. Or inj Lasix (30patients) and saltrestriction diet (0patients) given to managing edema, Tab.nefidipine (9patients), Tab.Amlodipine (8patients), Tab. Enalapril (4patients). Tab. Labetalol (beta blockers)(9patients), Tab. Telmisortan (9patients) given to treat hypertension, Tab prednisolone(24patients), inj. Methyl prednisolone (25patients), given to treat inflammation (corticosteroidtherapy).inj.methotrexate(1patient),injSulfasalazine(1patient),Tab.hydroxy chloroquine(13patients),Tab.azathioprine (1patients) given to prevent organ transplantationrejection(immunosuppressant),inj.Piperacillinetazobactum(1patient),injcef triaxone(32patients),Tab.doxycycline(2patient),inj.amoxicillin-clavulonate(2patient), other antibiotics(3patient) given to treat sepsis, inj.Or Tab.ranitidine (37patients) given totreat acidity(antacid), inj. Or Tab. Pantoprazole (7patients) given to treat acidity (protonpump inhibitor).

CONCLUSION

It can be concluded from our study that when compared with pediatrics and adults, in pediatrics minimal change disease is common when compared to adults, but there are chancesof minimal change disease in adults too. In adults membranous nephropathy is the primary cause and focal segmental glomerulo sclerosis is the secondary cause in this study many cases are of secondary cause in adults. Many of the symptoms are similar in pediatrics and adults. Some symptoms like polyarthralgia (which is a symptom of some autoimmune disorder like rheumatoid arthritis) that may leads to autoimmune mediated infection in glomerulus, and rashes (which is a symptom of systemic lupus erythematous) that may cause lupus nephritis. In this study many cases are found with lupus nephritis which is a complication of systemic lupus erythematous which is most common in female adults [46,47].

In investigation profile hypertension is one of the complication found mostly in pediatrics when compared to adults, WBC range was high in pediatrics [15000-25000 (75.5%)], urinary analysis shows high range of urinary PCR is found mostly in pediatrics
>3.5mg/dl (68.1%) pediatrics mean 11, adults mean 9.when compared to adults, hemoglobin levels are fluctuated among pediatrics when compared with adults, adults have normal rangesof hemoglobin. Hemoglobin fluctuations are mostly seen at the 10.6-12.6g/dl, serum albumin was found similar with slight difference in pediatrics and adults with mean of 15, and adults 18.

Treatment of adults and pediatrics has similar treatment by managing the symptoms such as edema(Lasix and salt restriction diet), hypertension mostly found in pediatrics compared with adults and treated with(nefidipine, amlodipine, enalapril, telmisartan etc), corticosteroid therapy (tab.prednisolone, inj. Methyl prednisolone, inj.hydrocortisone) study[48] idiopathic nephrotic synrome, immunosuppressant therapy (mycophenolate mofetil), steroid resistant therapy (tacrolimus, sulfasalazine etc), sepsis (piptaz, ceftriaxone, erythromycin, amoxyclav etc), antacids(ranitidine), PPIs (pantoprazole).

The study presence would be the first step for further multicenter studies with extended cohorts in a large population and to better understand the etiological factors, symptoms and treatment modalities in children and adults with nephrotic syndrome.

LIMITATIONS AND FUTURE DIRECTIONS

The study was conducted in the Inpatient department of Viswabharathi super specialty hospital, Gayathree estate Kurnool in a limited period of time i.e., 6 months with the availability of resources there in and the number of patients included in the study were limited and this can't be used to represent the Indian population. So, future studies can be directed to conduct in a largecontrolled population with a longer of time.

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