

A study of clinical profile and associated factors of nephrotic syndrome in children at tertiary health care center

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Abstract

Background: Nephrotic syndrome (NS) is a kidney disease with high incidence compared with other kidney disease. **Aims and Objectives:** To Study Clinical profile and Associated factors of Nephrotic syndrome in Children at tertiary health care center. **Methodology:** This was a cross-sectional study in the Children admitted to Pediatric department of a tertiary health care center during one-year period i.e. June 2015 to June 2016. Diagnosis of nephrotic syndrome was based on the following criteria – massive proteinuria > 40mg/m²/hr. or protein creatinine ratio >2-3:1, hypoalbuminemia 200 mg/dl. Total 32 patients were included into study by above criteria. The detailed history of the patients like age, sex, symptoms, signs, and associated factors etc. were noted. **Result:** In our study found that The majority of the patients were in the age group of 9-12 i.e. 34.38% followed by 6-9 i.e. 28.13%. 3-6 -21.88%. 0-3 -15.63%. The majority of the patients were Male -59.37%, Female- 40.63 %. The most common symptoms were Puffiness of Face -65.63%, followed by Abdominal distension 46.88%, Genital edema -37.50, Decreased frequency of Urination -34.38%, Burning Micturition 28.13%, Abdominal pain -21.88%, Fever-18.75%, Vomiting -15.63%. The most common signs were Hypertension -53.13% followed by Pitting Edema in 46.88%, Ascitis-40.63%, Hepatomegaly-34.38%, Pallor-28.13%. The most common associated factors seen were history of URTI-59.38%, Pneumonia-46.88%, UTI -37.50%, Osteomyelitis -28.13%, Meningitis -15.63%, Disseminated varicella -9.38%, Herpes Zoster -6.25%. **Conclusion:** It can be concluded from our study that The most common symptoms were Puffiness of Face followed by Abdominal distension, The most common signs were Hypertension, followed by Pitting Edema, Hepatomegaly, The most common associated factors seen were history of URTI, Pneumonia, UTI, Osteomyelitis, Meningitis, Disseminated varicella etc. **Key Words:** Nephrotic syndrome, URTI, Pneumonia, UTI, Osteomyelitis, Meningitis, Disseminated varicella.

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INTRODUCTION

Nephrotic syndrome (NS) is a kidney disease with high incidence compared with other kidney disease.^{1,2} NS is characterized by massive proteinuria, hyperlipidemia, hypoalbuminemia and edema³. It is 15 times more common in children than adults⁴. It is a quite common clinical condition in our country affecting usually the

young children 5. Most children (90%) with NS have a form of Idiopathic NS (INS)⁴. Most frequent type (85%) of INS is minimal change NS (MCNS) and more than 95% MCNS well responded to steroid therapy⁴. But INS is a chronic relapsing disease⁶. Frequency of relapses is highly variable. In a year, some patients have _ 6 relapses (frequent relapses)³. International study of kidney disease in children originally reported a relapse rate of 60% but later data suggests up to 76-90% with frequently relapsing rate up to 50%⁷. Relapse is also higher in our children which is 36.4%⁸. Infection is an important cause of relapse in MCNS, prevention and treatment of which could reduce proteinuria without necessity of steroid¹⁰. An Upper Respiratory Tract Infection (URTI) or a febrile episode often precipitates a relapse; occasionally there is no obvious cause³. Asymptomatic UTI might be an important and under diagnosed cause of relapse¹¹.

MATERIAL AND METHODS

This was a cross-sectional study in the Children admitted to Pediatric department of a tertiary health care center during one-year period i.e. June 2015 to June 2016. Diagnosis of nephrotic syndrome was based on the following criteria – massive proteinuria > 40mg/m²/hr. or protein creatinine ratio >2-3:1, hypoalbuminemia 200 mg/dl. Total 32 patients were included into study by above criteria. The detailed history of the patients like age, sex, symptoms, signs, and associated factors etc. were noted.

RESULT

Table 1: Age wise distribution of the Patients

Age group (Yrs.)	No.	Percentage (%)
0-3	5	15.63
3-6	7	21.88
6-9	9	28.13
9-12	11	34.38
Total	32	100.00

The majority of the patients were in the age group of 9-12 i.e. 34.38% followed by 6-9 i.e. 28.13%. 3-6 -21.88%. 0-3 -15.63%.

Table 2: Sex wise distribution of the Patients

Sex	No.	Percentage (%)
Male	19	59.37
Female	13	40.63
Total	32	100.00

The majority of the patients were Male -59.37%, Female-40.63 %.

Table 3: Distribution of the patients as per the Symptoms

Symptoms	No. (n=32)	Percentage (%)
Puffiness of Face	21	65.63
Abdominal distension	15	46.88
Genital edema	12	37.50
Decreased frequency of Urination	11	34.38
Burning Micturition	9	28.13
Abdominal pain	7	21.88
Fever	6	18.75
Vomiting	5	15.63

(*Majority of the patients were having more than one symptoms)

The most common symptoms were Puffiness of Face - 65.63%, followed by Abdominal distension 46.88%, Genital edema -37.50, Decreased frequency of Urination - 34.38%, Burning Micturition 28.13%, Abdominal pain - 21.88%, Fever-18.75%, Vomiting -15.63%.

Table 4: Distribution of the patients as per the signs

Signs	No. (n=32)	Percentage (%)
Hypertension	17	53.13
Pitting Edema	15	46.88
Ascitis	13	40.63
Hepatomegaly	11	34.38
Pallor	9	28.13

(*Majority of the patients were having more than one signs)

The most common signs were Hypertension -53.13% followed by Pitting Edema in 46.88%, Ascitis-40.63%, Hepatomegaly-34.38%, Pallor-28.13%.

Table 5: Distribution of the patients as per the associated factors

Associated factors	No. (n=32)	Percentage (%)
URTI	19	59.38
Pneumonia	15	46.88
UTI	12	37.50
Osteomyelitis	9	28.13
Meningitis	5	15.63
Disseminated varicella	3	9.38
Herpes Zoster	2	6.25

(*Majority of the patients were having more than one associated factors)

The most common associated factors seen were history of URTI-59.38%, Pneumonia-46.88%, UTI -37.50%, Osteomyelitis -28.13%, Meningitis -15.63%, Disseminated varicella -9.38%, Herpes Zoster -6.25%.

DISCUSSION

Young age and low level of serum protein at onset are independent risk for relapse¹³. Relapse within the first year is a powerful independent predictor of subsequent relapse and relapse within first 6 months of presentation is highly predictive of subsequent course^{14,15}. In our study found that The majority of the patients were in the age group of 9-12 i.e. 34.38% followed by 6-9 i.e. 28.13%. 3-6 -21.88%. 0-3 -15.63%. The majority of the patients were Male -59.37%, Female- 40.63 %. The most common symptoms were Puffiness of Face -65.63%, followed by Abdominal distension 46.88%, Genital edema -37.50, Decreased frequency of Urination - 34.38%, Burning Micturition 28.13%, Abdominal pain - 21.88%, Fever-18.75%, Vomiting -15.63%. The most common signs were Hypertension -53.13% followed by Pitting Edema in 46.88%, Ascitis-40.63%, Hepatomegaly-34.38%, Pallor-28.13%. The most common associated factors seen were history of URTI-59.38%, Pneumonia-46.88%, UTI -37.50%, Osteomyelitis -28.13%, Meningitis -15.63%, Disseminated varicella -9.38%, Herpes Zoster -6.25%. These findings are in confirmation with Sahana K.S *et al*¹⁶. They found Children presented between the ages of 2-15 years with mean age at presentation of 7.4 years with male to female ratio of 3.27:1. 36 % of cases presented for the first time and 63% with relapse. All patients presented with puffiness of face and swelling of limbs and genital edema in 31%. Ascites was present in 63% of cases, pleural effusion in 15% of cases and HTN in 12% of cases. Infections were seen in 31% of cases with UTI being the commonest infection noted (25%) but in our study Upper respiratory tract was most common infection.

CONCLUSION

It can be concluded from our study that The most common symptoms were Puffiness of Face followed by Abdominal distension, The most common signs were Hypertension, followed by Pitting Edema, Hepatomegaly, The most common associated factors seen were history of URTI, Pneumonia, UTI, Osteomyelitis, Meningitis, Disseminated varicella etc.

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