A RETROSPECTIVE STUDY ON CLINICAL PRESENTATION OF STEROID SENSITIVE NEPHROTIC SYNDROME

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ABSTRACT

BACKGROUND

Nephrotic syndrome is a disease affecting the renal system. Most paediatricians will invariably encounter children with nephrotic syndrome in their clinic. The disease is characterised by the presence of oedema, persistent heavy proteinuria, hypoproteinaemia and hypercholesterolaemia. The disease is influenced by factors like age, geography, race and also has certain genetic influence related to HLA (DR7, B12, B8). In children, minimal change nephrotic syndrome is the most common variant of primary nephrotic syndrome. It accounts to more than eighty per cent of the cases seen children under seven years whereas it has a chance of fifty per cent in the age group of seven to sixteen years. Males are affected two times higher compared to females. The parents usually bring the child to the hospital with signs of oedema. Usually, the child recovers with treatment, but in some cases, there can be relapse.

MATERIALS AND METHODS

- The study was conducted in the Department of Paediatrics, Travancore Medical College, Kollam.
- The study was done from January 2015 to January 2016.
- Sixty cases were identified and were chosen for the study.

INCLUSION CRITERIA

1. Steroid sensitive cases of nephrotic syndrome.
2. Age less than twelve years.
3. Admitted cases.

EXCLUSION CRITERIA

1. Steroid-resistant and steroid-dependent cases.
2. Age more than twelve years.
3. Outpatient cases.

RESULTS

Out of the sixty cases studied, forty one cases belonged to male sex and nineteen cases belonged to female sex. Based on the age group, maximum number of cases belonged to age group four to eight years, which amounted to thirty four cases followed by age group eight to twelve years, which amounted to eighteen cases. Age group zero to four years had the least number of cases, which amounted to eight in number.

Based on clinical signs and symptoms, fifty five cases presented with oedema either periorbital, scrotal or pedal oedema. Ten cases presented with fever. Nine cases presented with respiratory tract infection. Thirty three cases presented with anorexia, one case presented with diarrhoea, ascites was present in twenty one cases and hypertension was present in eleven cases. Haematuria was seen in fourteen cases and gross proteinuria was seen in all the sixty cases.

CONCLUSION

The study successfully evaluates the gender frequency, age group affected and signs and symptoms that are commonly involved in steroid sensitive nephrotic syndrome.

The present study draws the following conclusions;

- Majority of the cases belonged to male sex.
- Age group four years to eight years were affected in majority of the cases.
- Almost all cases presented with gross proteinuria and oedema.

KEYWORDS

Nephrotic Syndrome, Steroid Therapy, Male Sex, Haematuria, Proteinuria.

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INTRODUCTION: Nephrotic syndrome is a disease affecting the renal system. Most paediatricians will invariably encounter children with nephrotic syndrome in their clinic. The disease is characterised by the presence of oedema, persistent heavy proteinuria, hypoproteinaemia and hypercholesterolaemia. The disease is influenced by factors like age, geography, race and also has certain genetic influence related to HLA (DR7, B12, B8). The most detectable change that occurs in nephrotic syndrome is the increase in glomerular capillary permeability, which occurs due to alterations in the glomerular basement membrane and its lining epithelium. Due to this alteration, the glomerular capillary membrane, which used to restrict filtration of serum proteins now allows it to be freely filtered. This results in loss of serum proteins in urine, which results in decreased plasma oncotic pressure causing a shift in fluids from vascular compartment to the interstitial space resulting in oedema due to ineffective blood circulation. Further, there is retention of salt and water owing to the activation of renin angiotensin system. Reduced proteins stimulate lipoprotein synthesis in the liver causing hyperlipoproteinaemia.[1,2]

Nephrotic syndrome can be primary or secondary;
Primary Forms:

- Minimal change nephrotic syndrome.
- Primary focal glomerulosclerosis.
- Membranoproliferative glomerulonephritis.
- Idiopathic membranous nephropathy.

Secondary Forms:

- Systemic lupus erythematosus.
- Henoch-Schonlein purpura and other vasculitis.
- Chronic infectious - Hepatitis B, C, Malaria, HIV.
- Allergic.
- Diabetes.
- Amyloidosis.
- Malignancies.
- Congestive cardiac failure.
- Renal vein thrombosis.[2]

In children, minimal change nephrotic syndrome is the most common variant of primary nephrotic syndrome. It accounts to more than eighty percent of the cases seen children less than seven years whereas it has a chance of fifty percent in the age group of seven to sixteen years. Males are affected two times higher compared to females. Electron microscopy shows loss of epithelial foot process in majority of the cases.

Children with nephrotic syndrome present with oedema of pitting type with or without haematuria. On examination, they would have elevated blood pressure, diarrhoea may also be present due to intestinal oedema. A typical minimal change nephrotic syndrome will not show haematuria. Minimal change disease has become synonymous with steroid-sensitive primary nephrotic syndrome. More than eighty percent of children under thirteen years with primary nephrotic syndrome respond to corticosteroids (steroid-responsive nephritic syndrome mostly minimal change nephrotic syndrome) with a complete remission occurring within four weeks. Steroid therapy can be started without a biopsy when there are typical features of nephrotic syndrome. Indeed, the response to steroid therapy carries a greater prognostic weight than the histologic features seen on initial renal biopsy. Treatment involves administering oral prednisolone of about two mg/kg/day to a maximum of sixty mg/day.

Approximately, one third of those suffering from nephritic syndrome have only a single attack and definitively cured after the course of steroids. Ten to twenty percent of children experience incidence of relapse after several months of stopping the steroid treatment and cure in such children with nephrotic syndrome is seen after three or four episodes responding for a standard course of corticosteroid therapy.

The rest of them forty to fifty percent of patients who form a major chunk undergo frequent relapse either on completion of initial steroid therapy (called frequent relapsers) or when the steroid dosage is tapered off (called steroid dependent). These patients would have a prolonged treatment course. In such cases, the risk for relapse and the side effects of the treatment becomes a major point of concern. Response to treatment remains good as far as the children respond to steroid treatment.[3,4,5]

Long duration steroid treatment started in childhood itself is associated with a notable number of significant adversities, which includes mainly.[6,7,8,9]

- Growth retardation - short stature.
- Excessive body weight.
- Osteoporosis.
- Cardiovascular events - hypertension.
- Behavioural changes.
- Cataract.
- Avascular necrosis of hip.
- Hyperlipidaemia.
- Hyperglycaemia.
- Nephrolithiasis.

In this study, an attempt has been made to study the clinical presentation of steroid-sensitive nephrotic syndrome.

AIMS AND OBJECTIVES: To study the clinical presentation of steroid sensitive nephrotic syndrome.

MATERIALS AND METHODS: The study was conducted in the Department of Paediatrics, Travancore Medical College, Kollam.

The study was done from January 2015 to January 2016. Sixty cases were identified and were chosen for the study.

Inclusion Criteria:

1. Steroid sensitive cases of nephrotic syndrome.
2. Age less than twelve years.
3. Admitted cases.

Exclusion Criteria:

1. Steroid-resistant and steroid-dependent cases.
2. Age more than twelve years.
3. Outpatient cases.

The data of history and clinical presentation was obtained from case sheets. An honest attempt was made to study the presentation of nephrotic syndrome in age group below twelve years.

RESULTS

Sex	Frequency
Male	41
Female	19
Table 1: Showing Gender Distribution	

Age Group	Frequency
0-4 years	8 (13.33%)
4-8 years	34 (56.67%)
8-12 years	18 (30%)
Table 2: Showing Age Distribution	

Clinical Signs/Symptoms	Frequency
Oedema	55 (91.67%)
Fever	10 (16.67%)
Respiratory tract infection	9 (15%)
Anorexia	33 (55%)
Diarrhoea	1 (1.67%)
Ascites	21 (35%)
Hypertension	11 (18.33%)
Haematuria	14 (23.33%)
Gross proteinuria	60 (100%)
Table 3: Showing Clinical Presentation	

DISCUSSION: Out of the sixty cases studied, forty one cases belonged to male sex and nineteen cases belonged to female sex. Based on the age group, maximum number of cases belonged to age group four to eight years, which amounted to thirty four cases followed by age group eight to twelve years, which amounted to eighteen cases. Age group zero to four years had the least number of cases, which amounted to eight in number.

Based on clinical signs and symptoms, fifty five cases presented with oedema either per orbital, scrotal or pedal oedema. Ten cases presented with fever. Nine cases presented with respiratory tract infection. Thirty three cases presented with anorexia, one case presented with diarrhoea, ascites was present in twenty one cases, hypertension was present in eleven cases, haematuria was seen in fourteen cases and gross proteinuria was seen in all the sixty cases. These findings were similar to the studies done by other researchers.[10,11]

CONCLUSION: The present study draws the following conclusions;

- Majority of the cases belonged to male sex.
- Age group four years to eight years were affected in majority of the cases.
- Almost, all cases presented with gross proteinuria and oedema.

Although, the exact cause for the occurrence of nephrotic syndrome is not known. It responds well to steroid therapy with prednisolone.

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