

# A Study of Complications Faced in the Treatment of Nephrotic Syndrome

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**Abstract:** Most paediatricians will encounter a child with nephrotic syndrome in their clinic. The disease is characterised by the presence of oedema, persistent heavy proteinuria, hypoproteinaemia and hypercholesterolemia. More than eighty percent of the cases seen children will be under 7 years whereas forty to fifty percent in the age group of seven to fifteen. Males are affected twice higher compared to females. Steroid therapy is the most common mode of therapy. So it has a lot of complications. In the present study the growth retardation was seen in twenty three cases, excessive body weight was seen in thirty seven cases, osteoporosis was reported in one case, psychiatric cases in which the behaviour change was seen in one case. Ophthalmic problems included cataract in one case and glaucoma in two cases and hyperglycemia was seen in sixteen cases. The association of growth retardation, excessive body weight and hyperglycemia was significant. ( $p < 0.05$ ). So this study is to understand the complications faced by the paediatricians while treating the same.

**Keywords:** Complications, Nephrotic syndrome, Steroid, Growth retardation, hyperglycemia.

## 1. Introduction

Most paediatricians will encounter a child with nephrotic syndrome in their clinic. The disease is characterised by the presence of oedema, persistent heavy proteinuria, hypoproteinaemia and hypercholesterolemia. More than eighty percent of the cases seen children will be under 7 years whereas forty to fifty percent in the age group of seven to fifteen. Males are affected twice higher compared to females. Steroid therapy is the most common mode of therapy. So it has a lot of complications.

Steroid therapy can be started without a biopsy when there are typical features of nephrotic syndrome<sup>1</sup>. 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<sup>2,3</sup>.

The complications faced due to the prolonged steroid therapy may be many and life threatening. So it is the paediatrician's duty to look for the same. Growth retardation, excessive body weight, osteoporosis, psychiatric disorders, ophthalmic problems, avascular necrosis of hip and hyperglycaemia are some of the problems commonly encountered by the treating paediatrician<sup>4</sup>.

So this study is to understand the complications faced by the paediatricians while treating the same.

## 2. Aims and Objectives

To study the complications faced in the treatment of Nephrotic Syndrome.

## 3. Materials and Methods

- Eighty cases were taken up for the study in the Department of paediatrics.
- The study was done in the Department of paediatrics, Yenepoya Medical College, Deralakatte Mangalore.

- The study was done from November 2012 to March 2015.
- Detailed medical history and physical examination was conducted to check any complications and if present it was promptly noted.
- All statistical analysis was done using the latest SPSS software 2015. (California).

## 4. Results

**Table 1:** Complications faced due to steroid therapy.

Complications:	Frequency
Growth retardation	23
Excessive body weight	37
Osteoporosis	1
Psychiatric disorders	1
Avascular necrosis of hip	1
Ophthalmic problems	3
Hyperglycaemia	16

**Table 2:** Association of Complications:

Complications:	Percentage	P Value
Growth retardation	38.33%	0.001
Excessive body weight	46.25%	
Hyperglycaemia	20%	

## 5. Discussion

In the present study the growth retardation was seen in twenty three cases, excessive body weight was seen in thirty seven cases, osteoporosis was reported in one case, psychiatric cases in which the behaviour change was seen in one case. Ophthalmic problems included cataract in one case and glaucoma in two cases and hyperglycemia was seen in sixteen cases.

The association of growth retardation, excessive body weight and hyperglycemia was significant. ( $p < 0.05$ ).

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

NS 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 stimulates lipoprotein synthesis in the liver causing hyperlipoproteinemia.

Our study is in agreement with the other studies<sup>5,6,7,8,9</sup>. Minor differences may be due to the study done in different populations and the difference in the hereditary background.

## 6. Conclusion

The treatment of the nephrotic syndrome is not as easy as it sounds. Steroid therapy has got its own complications. The treating paediatrician should be ready to face the challenge.

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