

**SUCCESSFUL AYURVEDIC MANAGEMENT OF STEROID DEPENDENT NEPHROTIC SYNDROME-A CASE REPORT****<sup>1</sup>Sarita Pradip Gaikwad and <sup>2</sup>Maj. Pradip Yashwant Gaikwad**

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**ABSTRACT**

Nephrotic syndrome is a kidney disorder, presents with heavy proteinuria (>3.5 g Proteins/ 1.73 m<sup>2</sup> body surface area/24 hour), minimal hematuria, hypercholesterolemia, hypoalbuminemia, edema and hypertension. If left untreated or undiagnosed, there is progressive damage to glomeruli causing renal failure. Heavy proteinuria is the main characteristic of this syndrome. Several studies have noted that higher the 24-h urine protein excretion, more rapid is the decline in GFR. It may be primary or secondary to other systemic diseases. Case report: This 3 year old female child developed Nephrotic syndrome and was placed on steroids therapy, but used to relapse when steroids were withdrawn. The case was treated by Modern Medicine for more than 2.5 years but there was no cure. This case was successfully managed within few days by Ayurvedic treatment principles of Deepan pachan, Kled-Strotorodh-nashak, Shoth-har, Vatanuloman. Steroids were withdrawn gradually and completely over more than one month. There was no relapse. The case was free of proteinuria. This case study is the example of importance of alternative medicine in treating steroid dependent cases. When modern treatment has some limitations to treat such cases, it is ray of hope to thousands of poor sufferers of Nephrotic syndrome, finding them an effective alternative of Ayurvedic treatment.

**KEYWORDS:** Nephrotic syndrome, Steroid sensitive, Steroid dependent, Ayurvedic management, Dridamula Basti Shotha.

**INTRODUCTION**

Nephrotic syndrome is a well known kidney disorder occurring in children and adults. Classically, Nephrotic syndrome presents with heavy proteinuria, minimal hematuria, hypoalbuminemia, hypercholesterolemia, edema and hypertension.<sup>[1]</sup> In this modern era today, there is a gap in our understanding of the etiology of nephrotic syndrome of childhood. The pathogenesis may be understood secondary to immune dysregulation involving Cell mediated immunity as observed in Minimal Change Nephrotic Syndrome (MCNS) occurring after a viral infection or due to atopic disorder like allergy due to Pollen, milk product, pork, bee stings etc. This syndrome is found to be associated with HLA antigen. Expansion of CD4+ count and CD8 + T cell count is seen in MCNS.<sup>[2]</sup> Nephrotic syndrome may also present with Focal Segmental Glomerulosclerosis or Membranous Glomerulonephritis.

Corticosteroids remain the mainstay for treatment of nephrotic syndrome. Based on the response to

corticosteroids, children with Nephrotic syndrome may be divided into steroid-sensitive group which accounts to be around 75%, that has a good long term prognosis but with risk of frequent relapses/dependence and steroid resistant group that has poor outcomes despite immunosuppression.<sup>[3]</sup>

The incidence of Nephrotic syndrome is 9–10/100000 in Indian children and its prevalence is 12–16/100000 children.<sup>[4]</sup> Focal Segmental Glomerulosclerosis (FSGS) accounted for 30.6% of primary glomerular diseases making it the most common cause of nephrotic syndrome in adults. It was followed by Membranous glomerulonephritis (MGN) in 24.4%, Mesangiocapillary Glomerulonephritis in 17.9% and Minimal Change disease in 14.8%. In the age group >40 years, MGN was the most common lesion (32.5%) followed by FSGS (27.7%). Over the last five decades, there was a nearly five-fold increase in the incidence of FSGS, 3-fold increase in MGN and a 10-fold reduction in diffuse

proliferative glomerulonephritis while there was no major change in incidence of other diseases.<sup>[5]</sup>

### CASE REPORT

This 6 year old female child when reported to Ayurved on 29.4.2023, was found to be suffering from Nephrotic syndrome since 2021, when she was less than 4 year old. She was treated with corticosteroids having frequent relapses. Prednisolone could not be tapered off as she had become steroid dependent.

Patient C/o- Frequent episodes of edema over feet, hands, face and peri-orbital region Recent gain in weight 6 kg in 2 months. Now weight is 34 kg.

Lab findings revealed Heavy proteinuria and Hypercholesterolemia.

**Past history:-**H/o sore throat at the age of 1 year. H/o Hospitalization to treat relapse of Nephrotic syndrome w.e.f. 23.9.2021 to 28.9.2021 at one corporate hospital, in Pune.

H/o Covid infection detected on 2 February 2022.

**Personal history:-** Appetite low

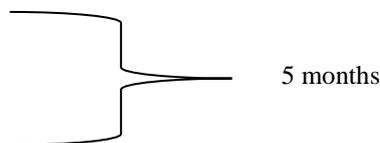
Bowel habits-Constipated; Urine output- Normal-About 1000 ml/24 Hr;  
Sleep-Disturbed

Present line of treatment:-The child was maintained on.

- Tab Omnacortyl (Prednisolone) 60 mg daily and gradually reducing to 5 mg/ day.
- The dose of steroids used to be increased when relapse occurred.
- Tab Pantoprazole 20 mg 1OD.
- Syp Shelcal 5 ml OD.

Sitopaladi choorna + Avipatikar choorna ½ TSF before meal with warm water twice daily was given, for Ras-Rakta gat Pachan It was continued for 5 months with following medicines.

Tab Gokshuradi guggul 1 TDS  
Tab Charndraprabhavati 1 TDS  
Gokshur Kadha 2TSF BD after meal  
Punarnavastak Quath 1TSF BD after meal  
Punarnavadi Mandur 1 TDS after meal



Arogyavardhini vati 1BD after meal from 4th month onwards

Phalatrikadi quath 1 TSF BD from 4th month onwards

The dose of Prednisolone was gradually tapered off in more than one month period.

### Investigations after completion of 5 months of Ayurvedic treatment

Hb-13.1 g/dL, RBC- 5.5 Mil/cmm, WBC-6700/cmm;  
Platelets-4,39000/cmm  
S. Creatinine- 0.57 mg/dL; Blood urea- 24.64 mg/dL,  
Cholesterol total-146 mg/dL  
SGPT-21.40 U/L, SGOT- 20.78 U/L, Alkaline phosphatase-107 U/L

O/E:-Afebrile, Pulse-98/min, Respiration-20/min B.P.- 130/90 mm Hg, Height- 115 cm, Wt- 34 Kg, BMI-25.7 Kg/m<sup>2</sup>. (Over weight)

Edema over face and periorbital region bilaterally +++

Edema over feet +++

Ascites +

RS-Air entry equal on both sides.

CVS-S1, S2 normal, no murmur audible

P/A- Shifting dullness, Ascites noted. Liver, Spleen not palpable.

**Investigations:-** Hb- 11.1g/dL, TLC-10900/cmm, RBCs-6.06 mil/cmm, HCT-36.1%, Platelets-6,93000/cmm; Cholesterol-Total-235 mg/dL Triglycerides-187 mg/dL; S. Protein- 5.9 gms %; Albumin- 3.8 gms %, Globulin-2.1 gms %, Albumin- Globulin ratio-1.8; S. Creatinine-0.51 mg/dL, Blood urea- 24.4 mg/dL. Serum Sodium-135 mmol/L, Serum Potassium-4.5 mmol/L, Serum Chloride 105 mmol/L; Serum Calcium-6.90 mg%.

Urine- Albumin++++, Glucose -Absent, RBCs-3-4/HPF, Pus cells-3-4/ HPF, Epithelial cells-1-2/HPF, Amorphous material ++; Urinary Protein-9200 mg/L, Urinary Creatinine -135.9 mg%; Protein Creatinine ratio: 67.69.

USG Abdomen:-Both the kidneys are enlarged and bulky. No other abnormality seen in Rt. kidney. Mild fullness of pelvicalyceal system noted in Lt. kidney. Mild thickening of urinary bladder walls noted. Mild tappable ascites is noted.

**Treatment:-** Patient was treated by Ayurvedic conservative line of treatment as follows.

**Deepan-Pachan:-** First of all, to boost the Agni, she was given Pippali choorna-0.5 gm in 50 ml fresh Erand Swaras (juice of castor leaves) early morning on empty stomach, for 3 consecutive days along with jaggery and Jowar roti.

**USG abdomen:- Opinion:-USG abdomen & KUB findings appears within normal limits**

**Response to treatment:-** Within 10 days, edema of the case was reduced (Please see photograph No. 3), Ascites was reduced. After one month, her weight was reduced by 4.5 Kg. After one month of treatment urine was free of Albumin. Thus Proteinuria being, the main sign of Nephrotic syndrome, patient was free of Proteinuria. All important laboratory findings were noted to be within normal range. Her appetite was improved and bowel habits became normal. After stopping of Steroids in just more than one month, there was no relapse. You can note the dramatic change in her physical condition on viewing her photographs of before treatment, during treatment and after 5 months of treatment.

**DISCUSSION**

Nephrotic syndrome presents with heavy proteinuria, minimal hematuria, hypoalbuminemia, hypercholesterolemia, edema and hypertension. Proteinuria leads to Hypoalbuminemia, which causes reduced plasma oncotic pressure. This is perceived by glomeruli as hypovolemia. It activates various mechanisms such as Renin-Angiotensin-Aldosterone system, Vasopressor system, Sympathetic nervous system causing Sodium and water retention resulting in to edema. Hypercholesterolemia is caused by various mechanisms like i) Increased hepatic lipoprotein synthesis occurring due to fall in plasma oncotic pressure. ii) Decreased catabolism of Triglycerides, LDL and Lipoproteins. In Steroid sensitive Nephrotic Syndrome, Hypercholesterolemia is transient and does not need any medications. In Steroid resistant Nephrotic syndrome cases Statin therapy is advocated having Hyperlipidemia.<sup>[2]</sup>

This case was maintained on corticosteroids for more than 2 years as the patient has become Steroid dependent, therefore steroids could not be tapered off completely. Finally the case was referred to Ayurved.

**Samprapti (Pathology):-** According to Ayurved, Vata, Pitta, and Kapha doshas are responsible for maintaining the health of an individual. If even one is vitiated, then disease occurs. In the case of nephrotic syndrome, all Tridosha, as well as Dushya (Rasa, Rakta, Udaka, Mutra, and Oja), are involved, Kapha and Vata are more aggravated in this disease.<sup>[6]</sup> Kapha dosh pradhan Kledvridhi causes Strotorodh. That may be reflected in terms of Anemia and oliguria. The main aim of the treatment is to correct the balance of the Tridosha. Ayurveda believes that the blockage of srotas (minute passageway)/ Strotorodh in kidneys causes the nephrotic syndrome. The flow of fluids within and outside the Vrikka and the carrying of urine, is done by the mutravaha srotas. When these srotas are clogged, the incoming ones cause shrinkage and the stopping of fluid supply to the kidneys, whereas the outgoing srotas cause swelling.<sup>[7]</sup> In Ayurved, Nephrotic syndrome has been mentioned as Dridamula Basthi Shoth.<sup>[8]</sup>

Cases of Nephrotic syndrome have been successfully treated by Ayurvedic line of treatment. One 6 year old male child of Nephrotic syndrome was reported to be successfully treated by Vaidya Vinay Velankar in the year 1991-92.<sup>[9]</sup> Author had successfully treated one steroid resistant Nephrotic syndrome who had developed Cushingoid symptoms due to prolonged use of steroids for 10 years, which is a commonly observed finding,<sup>[10]</sup> was really a challenge and this case was successfully treated by the author, within few months of Ayurvedic treatment.<sup>[11]</sup>

We followed Ayurvedic line of treatment with Deepan pachan, Kled-Strotorodh nashak, Shoth-har, Vatanuloman. Pippali choorna (Piper longum) along with fresh Erand Patra Swaras (juice of castor leaves/ Ricinus communis) for 3 consecutive days. Erandpatra is having Vataghna, Kaphaghna, Mutrakrichhghna, Gulma/Bastishoolharam & Saptavidha vridhhiharam & Adhobhagharam (Rechan) properties. (Bhavprakash Nighantu Guduchyadi varg: 60-61).<sup>[12]</sup> Pippali increases intelligence & Agni; useful in reducing Kapha, Shwas, Jwar. It cures Jirna jwar & in case of Mandagni, it has to be consumed with Gud (jaggery). With Gud it is useful in reducing cough, Ajeerna (indigestion), Aruchi, Shwas, Pandurog (Anemia), Krimi rog. (Bhavprakash Nighantu Haritkyadi varg:53-58).<sup>[13]</sup>

Sitopaladi choorna + Avipattikar choorna combination had synergistic Deepaniya and Pachniya effect. It created boosting of Jatharagni and Dhatvagni (Biological fire).

Gokshur quath (Tribulus terrestris) and Gokshuradi guggul is best remedy for Mutrakrichha as mentioned by Sharangdhar.<sup>[14]</sup> Further it has Mutral (Diuretic) properties, which helped to reduce the edema. Gokshuradi guggul is used as a remedy in Panchbhautik chikitsa. Apart from Gokshur, it contains Trikatu (Dry ginger (Zingiber officinale), +Black pepper (Piper nigrum) + Pippali (Piper longum), Triphala, Nagarmotha (Cyperus rotundus), Dhamasa (Fagonia Cretica) and Lakdi-Pashan choorna (Bergenia ligulata) It acts on diseases of Mutravahstrotas particularly Mutraghat and Mutra-Ashmari.<sup>[15]</sup>

Chandraprabha vati has Basti-gat Doshnashak properties as well as it is Shoth-nashak, Mutral (Diuretic) and Balya (Nephroprotective) properties.

Punarnavadi mandur and Punarnavastak contained main ingredient Punarnava (Boerhaavia diffusa). It has diuretic and anti-inflammatory properties due to which it is useful in reducing the risk of inflammatory kidney diseases.<sup>[16]</sup> It contains an active principle, 'Punarnavine' which has Diuretic, Nephro-protective, Anti nephrotoxic and Immunomodulation properties.<sup>[17]</sup> Punarnavadi mandur has a specific haematinic role in correcting Iron deficiency anemia. Formulation of Punarnavastak has been mentioned in Bhaishajya Ratnavali in following verse: Punarnava Nimb Patol Shunthi Tikta Amruta

Darvi Abhaya Kashayah Sarvang Shoth Udar Parshwa Shool Shwasanwitam Pandugadam Nihanti II B.R. 42/13.

This Punaranavastak formulation acts on Sarvang shoth (Anasarca), Udar (Ascites), Parshwa shool (Pleural effusion), Shwas (Asthma) and Pandu (Anemia).<sup>[18]</sup> Arogyavardhini is a combination of various herbs and few metallic bhasma. It digests the vitiated doshas and removes Hetu/ factors responsible for causing diseases. Arogyavardhini has a great Deepaniya action that kindles not only Jatharagni but also increases Agni of all the Dhatu at molecular level. As per Ayurved, Mutra nirmiti (Urine formation) takes place in Pakwashay where Sar-Kitta Vibhajan takes place. Arogyavardhini modulates this process in better way. Hence it is instrumental in Apunarbhav chikitsa (prevents recurrence/relapse of the disease). Arogyavardhini acts on liver, which is Moolsthan of Rakta dhatu. Kidney is formed from the Prasad ansh of Rakta and Meda dhatu. Improved Rakta dhatwagni promotes function of kidney. It makes urine

free of Albumin and reduces Vrikka shoth.<sup>[19]</sup> It reduces Serum Cholesterol level and controls hypertension.<sup>[20]</sup>

Phalatrikadi quath contains Haritaki (*Terminalia chebula*), Bibhitaki (*Terminalia bellirica*), Amalki (*Emblca officinalis*), Patola (*Trichosanthes dioica*) and Kiratikta (*Swertia chirayita*). It promotes Liver function.<sup>[21]</sup>

Combined use of above herbal drugs proved effective in treating this case.

### CONCLUSION

A steroid dependent case of Nephrotic syndrome which was unsuccessfully managed by Modern Medicine for more than 2 years, was successfully managed by Ayurvedic line of treatment within short period. This is testimony of strength of Ayurved in treating such cases. We don't claim we have completely cured the case, but at least we may say that Ayurvedic line of treatment reversed the disease process to some extent, as Proteinuria stopped, edema disappeared, Cholesterol values became normal. The case is stable, still under Ayurvedic treatment and being followed up regularly.



Figure 1 & 2: Case of Nephrtic syndrome before Ayurvedic treatment.



Fig. 3: After 10 days of treatment.



Fig.4 After 1 month of treatment.



Fig.5: After 3 months of treatment.



Fig.6: After 5 months of treatment.

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