

An Ayurvedic Approach Towards Nephrotic Syndrome

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Abstract: Nephrotic Syndrome is an important chronic renal disease prevalent among the pediatric population. The clinical and biochemical feature like leakage of a large amount of protein in the urine result in edema and hypoalbuminemia. The majority of children have idiopathic primary Nephrotic Syndrome. In Ayurveda, there is no direct mention of Nephrotic Syndrome. It can be included under Prameha and involved components are Rasa, Tridosha predominantly Kapha, Ojas, and Ama. Therefore, to improve the outcome, Ayurvedic drugs can be used as an adjuvant or only treatment as per the stage of the disease. Hence, an attempt is made to understand Nephrotic Syndrome in children from an Ayurvedic point of view for its better management.

Keywords: Nephrotic syndrome, Sandra Prameha, Vrikka (Kidney), Oja, Ama and Agni

1. Introduction

Nephrotic Syndrome is a group of symptoms that indicates kidney damage¹. It is characterised by the leakage of protein from the blood into the urine through damaged glomeruli. This disorder can affect people of all ages¹. It is an important chronic renal disease prevalent among the pediatric population and is 15 times more common in children than in adults. The incidence rate of nephrotic syndrome is 2 - 3/1, 00, 000 children per year. Among these about 90% of children with Nephrotic Syndrome are idiopathic. Nephrotic Syndrome also known as Primary Nephrotic Syndrome². It is characterized by edema, Urine Protein: Creatinine ratio >2000mg/gm, protein > 300 mg/dl, dipstick urine protein 3+ (+++) and hypoalbuminemia¹. There is an increased permeability through the damaged basement membrane in the renal glomerulus especially infectious or thromboembolic, which causes Nephrotic syndrome. A brief information about kidney function would help to understand the problem of nephrotic syndrome. Each person has two kidneys, which have a number of complicated functions. Their job is to 'filter and clean the blood', regulate the body fluid and remove wastes. Kidneys also have an important role in the control of blood pressure, maintenance of normal structure of the bone and maintenance appropriate of blood level. Urine is formed as a waste product. It comes out of the kidneys, through long tubes called ureters, and is stored in the bladder. When a person urinates, the urine passes out through the urethra. Each kidney contains about a million functioning units, called nephrons. The nephron is composed of a glomerulus and a long - coiled tube (tubule). Blood is filtered by the glomerulus and the fluid (filtrate) flows down the tubule. The tubules take back useful constituents and excrete the harmful ones. At the end of the individual tubule, a few drops of urine form. The tubules join to form larger channels, which in turn unite to form still bigger channels, ultimately ending in the ureter, which carries the urine from the kidney into the bladder. It is abnormal for amounts of protein to leak through the kidney

filters and appear in the urine. When this happens, we call it as spilling protein in the urine (proteinuria).

It can be divided into two types: Primary Nephrotic Syndrome (95%) & Secondary Nephrotic Syndrome (5%). Primary Nephrotic Syndrome is the result of an abnormality of glomerular permeability that may be primary with a disease - specific to the kidneys. Secondary Nephrotic Syndrome is due to congenital infections, diabetes, systemic lupus erythematosus, neoplasia, or certain drug use.

Nephrotic syndrome in Ayurveda - Nephrotic syndrome is not directly mentioned in the Ayurvedic classics. It can be included under the heading of Prameha (a disease of urinary system with altered composition, frequency and quantity of urine) because of main characteristic features of albuminuria with hyperlipidaemia associated with oedema¹. Albuminuria makes urine concentrated, viscid or dense. These features can be correlated with Sandrameha a subtype of Prameha. According to Ayurveda, Kapha Vata dominating Tridosha & Rasa, Mutra, Udaka, Ojas are the components which get vitiated in this disease¹. Ayurveda believes that the blockage of Srotas (minute passage way) in kidneys causes the Nephrotic Syndrome. The flow of fluids within and outside the kidneys, and the carrying of urine, is done by the Mutravaha Srotas. When these Srotas are clogged, the stopping of fluid supply to the kidneys, whereas the outgoing Srotas cause swelling³. Any disease even if it is not described in ancient text can be managed by applying the fundamental principles related to pathogenesis and treatment in Ayurveda.

Pathogenesis in Ayurveda

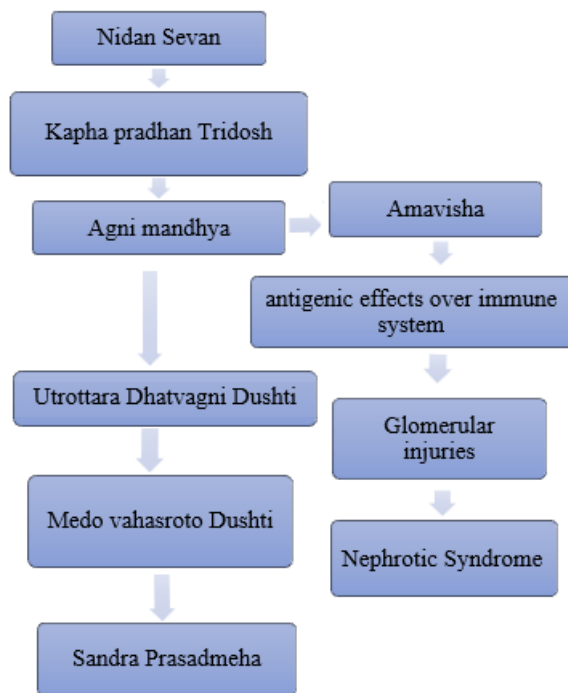
Acharya Charaka had mentioned Ojas as Prakrita Kapha i. e., normal state of Kapha and its instability leads to certain fluctuation in the immune system⁴. These fluctuation results in Auto - immune disorder. In children, immunity is determined by the Kapha which in turn is dependent on digestion. Digestion is the process that occurs with the help of various enzymes and secretions resembling Agni including

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Jataragni, Dhatwagni, and Bhutagni. This leads to a healthy and strong *Dhatu*⁵. But in present era life style is very hamper. Children consume the street food, junk food, packet food (Cheeps, Kurkure, bingo etc) which effects to the *Dhatwagni*. *Dhatwagni* is related to cellular metabolism and intracellular enzymatic process. This leads to *Dhatu Agnimandya* which occurs at the *Medo Dusti* level involving *Medovaha Srotas* and its *Moola* is *Vrukka* and *Vapavahana*. When *Dhatu Agnimandya* is present then *Dhatu Vriddhi* will occur which is abnormal i. e., extra collection of immune complexes over the basement membrane. If this *Ama* is not cleared then it gets converted into *Amavisha* which is toxic, insoluble, and exerts antigenic effects over the immune system leading to different exaggerated immune responses. This response is the cause of glomerular damage leading to pathology of Minimal change nephrotic syndrome⁵.



Clinical Manifestations -

a) *Shotha* (Puffiness of face) - especially around the eyes

- Apparent on rising in morning
- Subsides during the day
- Abdominal swelling
- Labial or scrotal swelling
- Ankle/leg swelling

b) Edema of intestinal mucosa may cause:

- Diarrhea
- Anorexia
- Poor intestinal absorption

c) Pleural effusion

d) Irritability

e) Lethargic

f) *Raktachap Vridhi* (increase blood pressure)

Management

There is no permanent cure for this disease in modern medicine yet. The symptoms are managed, and possible complications are prevented. The medicines given are mainly to strengthen the vital functions, and some immunosuppressant drugs are also effective, but they do have

their side effects. In children, their syndrome may go away over time.

In Ayurveda -

Ayurvedic herbs given for nephrotic syndrome are natural and have no side effects. They directly or indirectly serve the following purposes:

- To maintain *Tridosha*
- To correct *Agni*
- To correct *Ama Visha*
- To improve *Vyadhikshamatva*
- Reduces *Shotha*
- Improves the functioning of *Vrikka*.

Ayurvedic drugs

a) *Shothahar* (Reduces swelling) -

- *Kansha - haritki* (both *Panchmoola*) - It is very effective *Ayurvedic* formulations which combat swelling and inflammation.
- *Guda - adraka* - It is *shothahar* and *agnideepan*.
- *Krishnadi Churna* - It reduced *Tridoshaj Shotha* and chronic *Shotha*.
- *Punarnavadyarishta* - *Punarnava* plays important role in oedema and soothe the inflammation and it is diuretic.

b) *Mutral* (Diuretic) -

- *Punarnava* (*boerhavia diffusa*): Renal disorders, nephrotic syndrome, and glomerulonephritis are recovered, as blood circulation to the kidney also increase. It is a safe medicine that is good for edema, ascites, and renal failure. It also treats renal inflammatory disease effectively, due to its anti-inflammatory properties.
- *Gokshuru* (*Tribulus Terrestris*): Kidney, urinary bladder, and ureters, etc., are strengthened due to an increase in the blood circulation. The damaged tissues from renal disorder are healed by *gokhru*. It can destroy the renal stones and can also act as a diuretic.
- *Rakta Chandana* (*P. Santalinus*): Acts as a diuretic and anti-infective medicine. Besides cooling the urinary tract, it alkalizes the urine as well.
- *Palaash* (*Butea monosperma*): Infections of the urinary system are treated by this, and it acts as an alkalizer of urine as well
- *Trinnpanchmool*: Renal functions are improved, and it promotes the production of newer kidney cells by which the leakage of proteins reduces.
- *Gokshuradi guggul*: The pathophysiology is modified, and the functioning of kidneys is improved by this combination of herbs.
- *Chandraprabha Vati* - It contains 37 ingredients of plant and mineral origin. It can be used to safely and treat renal parenchymal illness. It possesses healing, cooling, diuretic and anti-inflammatory effect.

Pathya - apathya

Pathya - The child should be given a protein rich diet. High protein dietary articles include milk and milk products, dal, chana, soyabean, eggs & meat. *Trikatu* or *Yavakshar Sidha Mudag Yusha, Suvarchala, Grijnaka, Patol, Yava* or *Shali Dhanya* etc.

Apathya - (Lavana) The intake of salt should be reduced while the child has swelling. The amount used in ordinary cooking is permitted, but he should not be given extra salt and salty snacks. *Nutan Anna, Dadhi, Amla Dravya, Guru Aahar* and *Divaswapna*.

2. Conclusion

According to modern science, Nephrotic Syndrome is treatable not curable. Nephrotic syndrome can be correlated with *Sandra Prameha* on the basis of symptoms. In *Ayurvedic* management, the drugs given are *Kapha Dosha Shamaka*, *Ama Pachana*, *Agni Deepana* (increases digestion), *Shothahara* (reduces swelling), *Mutral* (diuretic) and enhances immune system & functioning of the kidney and hence improves the overall health of the child.

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