AN AYURVEDIC APPROACH ON NEPHROTIC SYNDROMEABSTRACT

1Dr.himanshi rathor, 2Prof. Ram Kumar Bhamu, 3Dr. Piyushika Sharma

1PG Scholars, 2 Professor and Head of Department, 3Lecturer

1Department of Kaumarbharitya,

1Madan Mohan Malviya Govt Ayurved College and Hospital Udaipur, Raj. India

ABSTRACT

The symptoms of childhood nephrotic syndrome are not a disease in itself; rather, they are a collection of signs that point to kidney injury, specifically damage to the glomeruli, which are microscopic units in the kidney where blood is filtered, which causes an excess of body protein released into urine.

The protein albumin, which is typically found in the blood, will seep into the urine when the kidneys are injured.

Large, intricate molecules called proteins serve a variety of vital purposes in the body. There are two varieties of childhood nephrotic syndrome: Primary nephrotic syndrome, which is the most prevalent kind and exclusively affects the kidneys. Secondary nephrotic syndrome—other illnesses are the cause of the syndrome.

Nephrotic syndrome is an autoimmune disease that has changed over time. Pathogenesis investigations have shown that alterations in podocyte function and permselectivity that lead to Nephrotic Syndrome are caused by T lymphocyte dysregulation and vascular permeability factors. Steroid reaction determines the outcome of treatment.

Most of them are initially vulnerable but subsequently recover or develop resistance or dependence on steroids. Steroid-dependent or resistant Nephrotic Syndrome has been treated with a variety of regimens and treatments, including levamisole, cyclophosphamide, cyclosporine, long-acting alternative cortiosteroids and others, with differing degrees of efficacy or more severe side effects. Alternative therapy is therefore necessary.

In the treatment of steroid-dependent cases of NS, polyherbal formulations with immunomodulatory, nephroprotective and antioxidant properties might work better as an adjuvant to modern therapeutic drugs.

INTRODUCTION

Large protein leakage from the kidneys into the urine is a symptom of nephrotic syndrome. This may result in a number of issues, such as edema of bodily tissues and an increased risk of contracting an infection.

Nephrotic Syndrome is responsible for about 20% of all causes of End-Stage Kidney Disease causes ESRD [1,2]. The burden of disease is that it affects people of all ages, regardless of gender or race. The frequency is higher in adults (26:1) than in children. In a 2:1 ratio, males are more prone than females [3]. Worldwide, the yearly incidence of nephrotic syndrome in adults was three new cases per 100,000[4]. About 12% of all causes of chronic renal disease (CRD) and up to 20% of end-stage renal disease (ESRD) in children can be attributed to idiopathic nephrotic syndrome [5]. Focal Segmental Glomerulo Sclerosis (FSGS), one of the primary nephrotic syndromes, is the most frequent recurrent condition that results in allograft loss and has a significant incidence of recurrence (30–40%) following kidney transplantation [6].

Patients often require immune suppression to compete this disease i.e. steroids which they get resistant to. Therefore, is a need for time to find and establish scientifically a safe regimen for this kind of disease.

LITERATURE REVIEW

Large amounts of protein are leaking from the kidney into the urine as a result of nephrotic syndrome. Researchers have linked certain diseases and genetic abnormalities that affect the kidneys to the condition, which is the most common cause of primary childhood nephrotic syndrome. This can result in a variety of challenges, such as swelling of body tissues and an increased risk of contracting an infection, whether idiopathic or unknown. An underlying infection is the cause of subsequent childhood nephrotic syndrome. Abnormal renal function brought on by a primary condition may potentially result in pediatric nephrotic syndrome later on. Nephrotic syndrome in children can also be brought on by genetic disorders, which are diseases that are present from birth.

MATERIAL AND METHODS

DEFINITION:

Large protein leakage from the kidneys into the urine is a symptom of nephrotic syndrome. An increased risk of infection and swelling of bodily parts are only two of the difficulties that may result from this

CAUSES

Researchers have connected some illnesses and particular genetic alterations that harm the kidneys with primary childhood nephrotic syndrome, even though idiopathic or unknown, diseases are the most frequent cause of the condition.

Secondary childhood nephrotic syndrome is brought on by an underlying illness or infection. This underlying sickness or infection is known as a primary illness because it alters kidney function and may lead to secondary pediatric nephrotic syndrome.

PRIMARY NEPHROTIC SYNDROME

The following diseases are different types of idiopathic childhood nephrotic syndrome:

Minimal change disease is the most common cause of idiopathic childhood nephrotic syndrome [7]. Scarring in various parts of the kidney is known as focal segmental glomerulosclerosis:

"Focal" refers to the fact that only a portion of the glomeruli develop scarring.
"Segmental" refers to injury that just impacts a portion of a single glomerulus.
A class of diseases known as membraneoproliferative glomerulonephritis is characterized by antibody depos its that accumulate in the glomeruli, thickening and damaging them.

SECONDARY NEPHROTIC SYNDROME

Secondary nephrotic syndrome occurs due to an underlying disease like diabetes, lupus, infections, drugs or malignancy. It causes heavy proteinuria, edema, hypoalbuminemia and hyperlipidemia, requiring treatment of the primary cause.

SYMPTOMS

Nephrotic syndrome typically presents with generalized swelling (edema), which is most noticeable around the eyes in the morning and may progress to involve the legs, feet, abdomen and entire body. Patients often pass frothy or foamy urine due to heavy protein loss. As albumin levels drop, individuals may experience fatigue, weakness and poor appetite. Weight gain occurs due to fluid retention rather than increased body mass. Some patients may have reduced urine output, while others notice recurrent infections because of the loss of protective immunoglobulins in urine. Additionally, the condition often causes high cholesterol levels (hyperlipidemia) and may lead to blood clots due to a hypercoagulable state. Together, these symptoms reflect the underlying damage to the kidney's filtering system.

DIAGNOSIS

A medical and family history, as well as a physical exam, is used to identify childhood nephrotic syndrome.

• Urine test

• A blood examination

• Kidney ultrasonography

• A biopsy of the kidney

AYURVEDIC APPROACH

Most research suggests that Minimal Change Disease is strongly linked to immune system dysfunction. The current understanding is that an excessive, abnormal immune-mediated response causes injury to the glomerular membrane, giving the disease an autoimmune-like mechanism. [8]

Importantly, no specific immunoglobulin deposits are seen on the glomeruli in MCD. Instead, the major role is believed to be played by T-cell–mediated immune activity. Abnormal T-cell functions lead to the release of circulating factors (lymphokines) that damage the podocytes and alter the glomerular basement membrane permeability. This results in increased protein leakage.

During relapses, B cells are also thought to contribute to disease activity.

Overall, the most accepted explanation is that an overactive, dysregulated immune response—primarily T cells, with a role for B cells—drives the pathogenesis of Minimal Change Disease.

In *Ayurvedic* understanding, the concept of immunity is closely aligned with *Ojas* and *Kapha*. Clinical improvement following immune suppression suggests that an exaggerated or dysregulated immune response—results to auto immunity—plays a role in disease progression. This parallels the *Ayurvedic* notions of *Ojo-Viṣrama*, *Ojo-Vyapada* and other *Ojas* abnormalities. *Kapha*, being fundamentally associated with *Bala*, *Avalambhana* and overall immune competence, is also implicated as a destabilizing factor. During *Balya-Avastha*, when *Kapha* predominates physiologically, the body remains functionally immature; any imbalance in *Kapha* at this stage can therefore manifest as immune instability.[9]

Ojo-Vyapada, characterized by functional disturbances of *Ojas*, aligns with the pathological consequences of an exaggerated immune response that damages self-tissues. Classical features such as *Stabdata* (rigidity and restricted movement), *Gurugatrata* (heaviness due to disrupted fat metabolism and fluid retention), *Vata-Sopha* (generalized shifting pitting edema), *Varṇa-bheda* (pale, glossy change in complexion) and *Glani* (generalized physical and mental fatigue) closely resemble the clinical manifestations observed in nephrotic conditions [10].

Another disturbance, *Ojo-Viṣrama*, has also been correlated with Nephrotic Syndrome. It presents features analogous to *Sandhi-Visleṣa* (joint laxity caused by derangement of *Slesaka Kapha*), *Gatra-Sadana* (loss of

bodily strength due to protein depletion), *Doṣa-cavana* (destabilization or displacement of doshas), and *Kriya-Saṃnirodha* (exercise intolerance, breathlessness and reduced functional capacity) [11].

Furthermore, Nephrotic Syndrome is recognized as an immune-mediated disorder involving weakened and dysregulated immune function; hence, it may also be related to *Oja-Kṣaya*. Clinical indicators such as generalized debility, malaise, psychological distress, unpleasant sensory experiences, *Murccha*, *Maṃsa-Kṣaya*, *Moha*, *Pralapa* and in severe cases *Maraṇa* reflect depletion of *Ojas*. In such presentations—especially steroid-dependent states—*Ayurveda* recommends strengthening therapies including *Jivaniya* aushadhi, *Kṣhira* and *Rasa* (*Maṃsa-rasa*) to restore vitality [12].

Thus, considering the above perspectives, disturbances of *Ojas*—whether depletion, displacement or vitiation—play a central role in the *Ayurvedic* interpretation of nephrotic pathology. Identifying the specific type of *Ojas* involvement is essential before planning an appropriate therapeutic strategy.

In *Ayurveda*, the term *Vṛkka* encompasses both the kidneys and the adrenal glands. The adrenal glands synthesize key hormones involved in lipid metabolism, and disturbances in this metabolic pathway are a well-recognized feature of Nephrotic Syndrome (NS) [13]. The marked hypercholesterolemia observed in NS reflects impaired fat metabolism. The involvement of *Vṛkka* in NS therefore suggests vitiation of *Medovaha Srotas*, arising from *Dhatvagni-Mandya* of *Meda Dhatu*. Addressing *Medovaha Srotas* dysfunction is thus a crucial component of *Ayurvedic* management in this condition.

Dhatvagni governs metabolic activity at the cellular level through intracellular enzymatic processes. When *Dhatu*-level *Agni* becomes diminished, aberrant *Dhatu Vṛddhi* or deposition of undesirable metabolic by-products occurs. Conversely, excessive *Dhatvagni* leads to tissue depletion. When such improperly processed metabolites (*Sama*) accumulate within cells and tissues, they can evolve into *Ama Viṣa*, which is water-insoluble and capable of exerting antigenic effects on body tissues. This disrupts immune homeostasis and impairs the functional integrity of the organism [14].

Another central manifestation of nephrotic syndrome is generalized edema, which progressively limits patient functionality. This highlights the role of *Udakavaha* Srotas. Hypoalbuminemia leads to abnormal fluid distribution across compartments, and the primary therapeutic goal for *Udakavaha Srotodushti* is to restore intravascular volume through enhancement of plasma protein concentration [15].

Ayurvedic Management of Nephrotic Syndrome

Nephrotic Syndrome is interpreted as an autoimmune disorder in which *Ojas* plays a pivotal role in sustaining immune stability. *Ojas* modulates immune responses and prevents excessive or inappropriate immunological activity. Thus, strengthening *Ojas* is central to therapy. A *Sattvika* diet is recommended to enhance Ojas [16].

Substances possessing *Vṛṣya*, *Snigdha*, *Madhura*, *Guru*, *Sita*, *Prasanna* and *Prasada* qualities—attributes akin to *Ojas*—are considered ideal. Immunomodulatory herbs such as *Guḍuci*, *Punarnava*, *Pippali* and *Asvagandha* are preferred for regulating immune function. Immune enhancement may also be achieved through appropriate dietary measures and lifestyle practices. *Sattvika* foods like *Kṣhira*, *Ghṛta*, *Saḍrasa-yukta ahara* and regular consumption of *Ghṛta* are beneficial.

Adherence to proper dietary protocols—including avoidance of *Asatmya ahara*, stale or processed foods, fast foods, canned items, and excessive salt intake (all of which contribute to *Ojakṣhaya*)—is essential. Complementary regimens such as *Sadvṛtta*, *Swasthavṛtta*, adequate exercise, and faith-based practices also contribute to Ojas enhancement. Additionally, *Yoga* and *Praṇayama* serve as supportive therapies [17].

The cardinal clinical feature of Nephrotic Syndrome is generalized edema, which, from an *Ayurvedic* perspective, arises secondary to *Udaka-vaha Srotodusti*. Management of edema conventionally involves the use of diuretics; in Ayurveda, these correspond to *Mutrala Aushadhi*, which not only facilitate diuresis but also provide renoprotective benefits. Herbs such as *Punarnava*, *Gokshura*, *Sariva*, *Usheera*, *Shilajatu* and

Haridra serve dual functions—promoting effective urine output while supporting overall renal physiology [18].

Additionally, *Rasayana* therapy plays a crucial role in strengthening the *Vrikka* (kidneys) and revitalizing the *Medovaha Srotas*, thereby facilitating the repair and regeneration of damaged renal tissues. Formulations like *Nisha*, *Amalaki Rasayana*, *Punarnava* and *Shilajatu* act as potent rejuvenators and contribute to improved long-term renal outcomes [19].

DISCUSSION

Childhood nephrotic syndrome (NS) represents a complex immune-mediated renal disorder characterized by heavy proteinuria, hypoalbuminemia, edema and hyperlipidemia, arising primarily from damage to the glomerular filtration barrier. Contemporary biomedical research strongly supports the role of podocyte injury and altered glomerular permselectivity driven mainly by T-cell dysregulation, with contributory roles of B cells during relapses. The variable response to corticosteroids—ranging from steroid sensitivity to dependence and resistance—highlights the heterogeneity of disease mechanisms and underscores the limitations of prolonged immunosuppression due to toxicity and adverse effects.

The *Ayurvedic* interpretation offers a complementary perspective by correlating nephrotic syndrome with disturbances of *Ojas*, *Kapha* and *Medovaha Srotas*. Concepts such as *Ojo*-Vyiapada, *Ojo-Viṣrama* and *Oja-Kṣaya* closely mirror the clinical manifestations of NS, including edema, fatigue, immune vulnerability and metabolic derangements. Hyperlipidemia in NS aligns with *Meda-Dhatu* dysfunction secondary to *Dhatvagni-Mandya*, while generalized edema reflects *Udakavaha Srotodusti*.

Ayurvedic management emphasizes restoration of immune balance and tissue integrity through *Ojas*-enhancing measures, *Rasayana* therapy and *Mutrala aushadhi*. Polyherbal formulations possessing immunomodulatory, nephroprotective and antioxidant properties—such as *Guduci*, *Punarnava* and *Gokshura*—may act as effective adjuvants to modern therapy, particularly in steroid-dependent cases. An integrative approach combining judicious immunosuppression with *Ayurvedic* principles may therefore improve long-term outcomes and reduce treatment-related morbidity in childhood nephrotic syndrome.

CONCLUSION

Certain herbs used in *Ayurvedic* treatment for nephrotic syndrome directly impact kidney cells to enhance their function, prevent autoimmune and anti-inflammatory disease, and regenerate new, healthy cells. Effective care of nephrotic syndrome is rewarded with a greater recurrence rate, even if contemporary medicine has advanced numerous therapy ideas. In contrast, *Ayurveda* is the most effective treatment for a wide range of illnesses for which conventional medicine is ineffective.

REFERENCES

[1] Eddy AA, Symons JM. Nephrotic syndrome in childhood. Lancet. 2003; 362(9384):629-39.

[2] Singhal R, Brimble KS. Thromboembolic complications in the nephrotic syndrome: pathophysiology and clinical management. Thromb Res. 2006; 118(3):397-407.

[3] Llach F. Thromboembolic complications in nephrotic syndrome: coagulation abnormalities, renal vein thrombosis, and other conditions. Postgraduate medicine. 1984; 76(6):111-23.

[4] Fine JL, Grzybicki DM, Silowash R, et al. Evaluation of whole slide image immunohistochemistry interpretation in challenging prostate needle biopsies. Hum Pathol. 2008; 39(4):564-72.

[5] Waldman M, Crew RJ, Valeri A, et al. Adult minimal change disease: clinical characteristics, treatment, and outcomes. Clin J Ame Soc Nephrol. 2007; 2(3):445 53.

[6] Palmer SC, Nand K, Strippoli GF. Interventions for minimal change disease in adults with nephrotic syndrome. Cochrane Database Syst Rev. 2008; 2008(1):CD001537.

[7] Kaviraj ambikadatta shastri sushrut samhita, chaukhamba sanskrut sansthan , Varanasi.sutra sthan 35-13.

8. Kliegman Robert M., St Geme III Joseph W., Blum Nathan J., Shah Samir S., Tasker Robert C., Wilson Karen M. Nelson textbook of Pediatrics Volume 2 Edition 21Page No -2755.

9. Vaidya Yadav Ji Trikamji Ahcharya Charaka Samhita by Agnivesha revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta edition 2015 Viamana Sthana, Chapter no. 08, verse – 122, published by choukhamba Orientalia Varanasi, page no. 250

10. Kaviraj Ambikadutta Shastri (2015), Sushrut Samhita Sutra Sthana -TattvaSandipikaHindi Commentrychapter no. 15, verse – 29, Chaukhambha Sanskrit Sansthan, Varanasi. Page No. – 102

11. KavirajAmbikaduttaShastri (2015), SushrutSamhita SutraSthana -TattvaSandipikaHindi Commentrychapter no. 15, verse – 29, Chaukhambha Sanskrit Sansthan, Varanasi. Page No. – 102

12. Late Dr. Anna Moreswara Kunte and Krsna Ramchndra Sastri Navare Astanghrdayam composed by Vagbhata commentaris Sarvangasundra of Arundatta and Ayurveda Rasayana of Hemadri edited by Bhisagcharya Harisastri Paradakara Vaidya Edition 2019 Sutra Sthana chapter no. 11 verse no 40 published by choukhamba orentaliya Varanasi page no. 190

13. Harsh Mohan Textbook of Pathlogy fifth edtion 2005 section II chapter 20 published by Jaypee brothers medical publishers Page no. 684

14. Kliegman Robert M., St Geme III Joseph W., Blum Nathan J., Shah Samir S., Tasker Robert C., Wilson Karen M. Nelson textbook of Pediatrics Volume 2 Edition 21Page No -2752.

15. Vaidya Yadav Ji Trikamji Ahcharya Charaka Samhita by Agnivesha revised by Charaka and Dridhabala with the Ayurveda Dipika commentary of Chakrapanidatta edition 2015 Viamana Sthana, Chapter no. 05, verse – 08, published by choukhamba Orientalia Varanasi, page no. 250

16. Pt. Kasinatha Sastri & Dr. Gorakha Natha Chaturvedi (2015) Agnivesh tantra Sharir Sthana Vidyotini Hindi Commentary. (vol 1). Chaukhambha Bharti Academy Varanasi Page No

17. Pt. Kasinatha Sastri & Dr. Gorakha Natha Chaturvedi (2015) Agnivesh tantra Sharir Sthana Vidyotini Hindi Commentary. (vol 1). Chaukhambha Bharti Academy Varanasi Page No

18. Dravyagunanavigiyan 2 Acharya Privrit Sharma, Hindi commentary, Edition 2017, chaukhambha Krishnadas Academy Varanasi, page no. 630,632,114,162

19. Shri Kaviraj Ambikadatta Shastri Ayurvedacharya Bhaisajyaratnavali of Shri Govind Das edited by Bhisagratna Shri Brahmashankar Mishra and Shri Rajeshwardatta Shastri edition 2019-chapter 34,60 verse 19,20, 158 - 161 published by choukhamba Prakashana Varanasi page no 700,960.