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Ayurvedic Approach of Nephrotic Syndrome and its Management with Herbal and Herbomineral Preparations

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ABSTRACT

Nephrotic syndrome is one of the prevalent diseases in pediatric population. Its prevalence is about 2-7 in per 100000 children. Nephrotic syndrome has evolved as an immunological condition having characteristics of massive proteinuria, (>40 mg/m^2/hrs.), hypoalbuminemia (albumin <2.5g/dL), hyperlipidemia (cholesterol > 200mg/dl) and edema which start from face. 90% of children will have idiopathic nephrotic syndrome, whereas the remaining 85% will have minimal change nephrotic syndrome. However, a histological categorization of Nephrotic Syndrome may be done as Primary Nephrotic Syndrome, in which - Nephrotic syndrome can be caused by numerous sources and can be either entirely due to disease/damage of the Glomerulus and restricted to the kidney. One of the basic Nephrotic syndromes is minimal change Nephrotic disease, which is relatively prevalent in youngsters, and there will be normal appearance of Nephron and kidney under optical microscope. This is the most typical reason for Primary Nephrotic Syndrome which is also known as Idiopathic Nephrotic Syndrome. Prognosis of this syndrome is depended on responsiveness of the patient toward steroids. Most of patients are sensitive to steroids initially and later become steroid dependent or resistant. It has been noted that, after giving treatment with protocol to steroid dependent and resistant patients with variable result outcome and with more side effects. Hence there is need of certain type of medicine and formulation which shows no side effects and having more potency to treat the Nephrotic Syndrome. Although Ayurveda does not identify any disease as Nephrotic syndrome, the similarities between signs and symptoms and a group of diseases with *Ojas* and its aberrations addressed in various Ayurveda classics. However, Ayurvedic therapy is heavily reliant on *Dhatwagnimandhya* treatment by *Amapachana*, *Ojovardhaka*, *Rasayana* treatment, and *Medhovaha Srotodusti* treatment. *Mutrala* and renal protective drugs should also be examined. Author makes an effort to elaborate etiopathogenesis, pathology, sign and symptoms in the light of Ayurveda along with role of herbs in the management of nephrotic syndrome.

Keywords: Nephrotic Syndrome, *Ojas*, *Dhatwagnimandhya*, *Amapachana*, *Ojovardhaka*, *Mutrala*

INTRODUCTION

Nephrotic syndrome (NS) is a common chronic renal condition in children. The yearly incidence of NS ranges from 2 to 7 per 100,000 children, and the prevalence is unknown between 12 and 16 per 100,000 [1]. It is caused by changes in perm selectivity at the glomerular capillary wall, which results in a failure to limit protein loss in the urine [2]. Heavy proteinuria

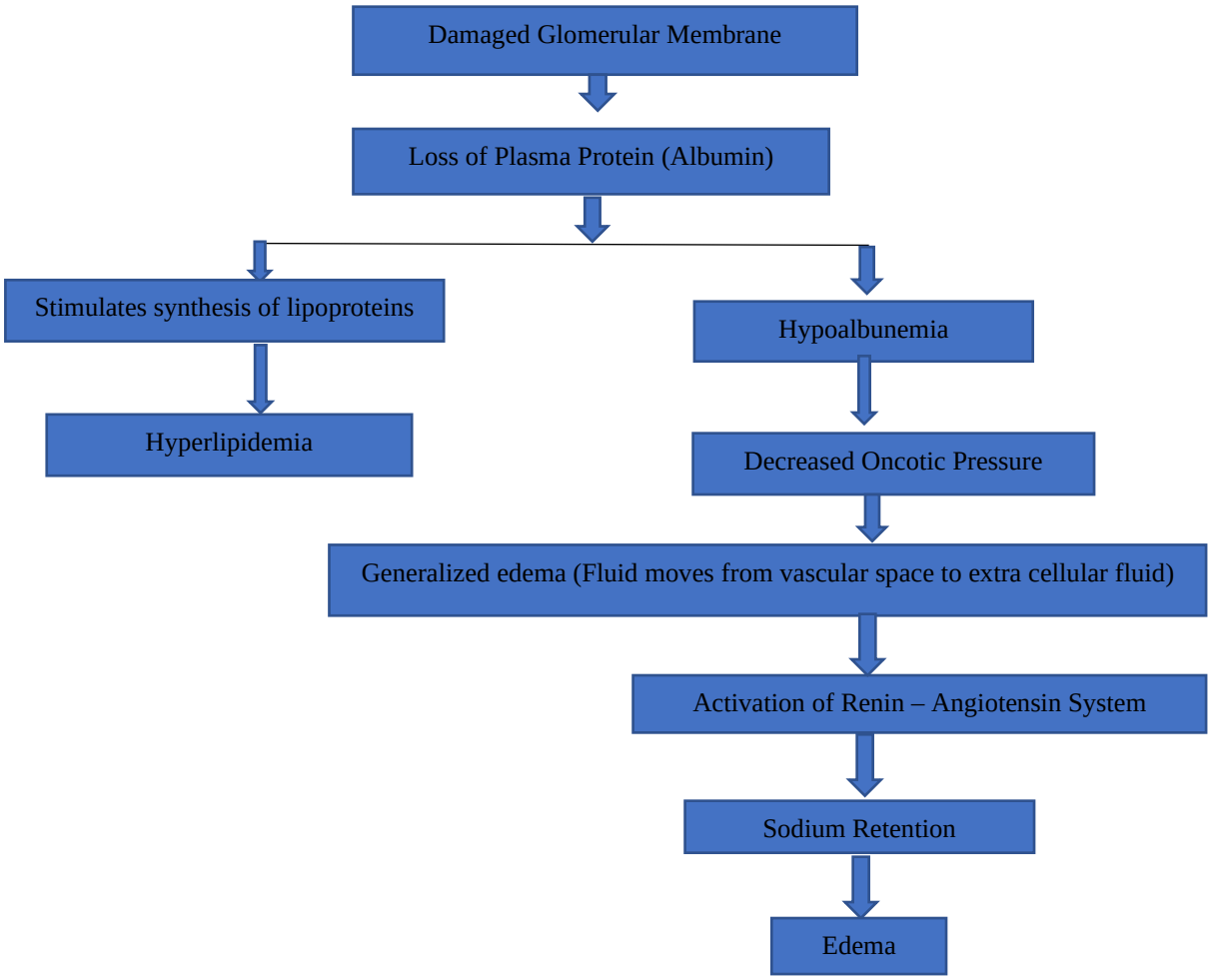
(>3.5 g/dl), hypoalbuminemia (serum albumin <2.5 g/dL), edema, and hypercholesterolemia (serum cholesterol >200 mg/dl) are all symptoms of NS. Proteinuria in the nephrotic range is defined as more than 1000 mg/m2 per day or a spot (random) urine protein-to-creatinine ratio more than 2 mg/mg [3]. Primary Nephrotic Syndrome is classified into several kinds, including Minimal Change Nephrotic Syndrome and Focal Segmental Glomerulosclerosis (FSGS), the most prevalent cause of Nephrotic Syndrome in Adults [4].Meanwhile, Diabetic Nephropathy, Systemic Lupus Erythematosus, Sarcoidosis, Syphilis, Hepatitis B, HIV, Amyloidosis, Vasculitis, Cancers, and Drugs such as Gold salts, Penicillin Captopril, and others might produce Secondary Nephrotic Syndrome. Finnish Nephrotic syndrome is an uncommon kind of congenital nephrotic syndrome caused by a genetic mutation [5].On renal histology, more than 80% of patients with NS had minimal change disease (MCD), with the remainder having focal segmental glomerulosclerosis (FSGS) and mesangioproliferative glomerulonephritis (MPGN) [6, 7].Patients with primary NS typically require immunosuppression (Corticosteroids) to achieve remission, although many relapse or become resistant to immunosuppressive medication. Immunosuppressive treatment, on the other hand, has a negative impact. Steroid responsiveness is the most critical determinant determining outcome in children with NS. More than 70% of children with steroid-sensitive NS relapse, with over 50% experiencing repeated relapses or steroid dependency [2].Long-term alternate day corticosteroids, alkylating agents (cyclophosphamide), calceneurin inhibitors (cyclosporine, Tacrolimus), and immunomodulatory medicines (Levamisole) are the main pharmaceuticals used to treat relapses, steroid dependency (SD), or steroid resistance (SR) NS. While many of these regimens are helpful in treating SR/SD NS, the majority of them are accompanied with adverse effects such as infection, osteoporosis, bone marrow suppression, corticosteroid toxicity, and hepato-renal toxicity, among others [2]. Significant proportions of patients are at risk for complications, progressive kidney disease, and end stage renal disease; the lack of efficacy and safety of current treatment protocols make treating NS a difficult challenge, clearly necessitates the need for an integrated treatment.

Pathophysiology

Nephrotic syndrome is mainly related with the filtration of urine in glomerulus. In kidney, glomerulus filters the blood which goes to nephron. Glomerular basement membrane is a basal laminal layer and plays a major role in filtration of blood, filtration bed is formed by glomerular endothelium which is consist of glomerular basement membrane, filtration slits present between the podocytes. Other structure which help in holding protein and ions from passing through urine are mesangial cells and matrix Cd 206 receptors. The molecules of weight less than 40,000 Dalton passes from the slits. Proteinuria occur when there increase in permeability of glomerular capillary wall. Due to certain pathology, there is loss of negatively charged glycoprotein from capillary wall which allows higher molecular weight proteins like albumin pass through urine. Protein excretion (mainly albumin) > 2gm/24hrs from urine which results in hypoalbuminemia and ultimately edema occur when albumin level in blood falls < 2.5g/dl [8]. Glomerulus is afflicted by inflammation that allows protein like albumin and antithombin and immunoglobulin pass through the cell membrane and finally appears in urine. Nephrotic Syndrome pathology is still unknown as it is known as idiopathic NS or minimal change NS which is common in children. As the cause remains unknown but on immunosuppression by giving immune suppressive drugs like steroids, there is rapid improvement seen [9]. Exaggerated immune response can be the suspicious

cause of NS. This condition is more common in boys (2:1). Initial episodes of NS are associated with Upper respiratory tract infection. However, the initial sign is Pitting Edema around the eyes and lower extremities. Edema becomes generalized with weight increase, resulting in Pleural effusion, pericardial effusion, Ascites, and Scrotal edema, suggesting the collection of edemas fluid in the body's loose parts. Edema has a propensity to accumulate in the dependent areas of the body and move from the face to the back and legs. NS symptoms also associated with Appetite loss, stomach discomfort, and diarrhea. Hypertension is extremely infrequent.[10].

Pathophysiology



Nephrotic Syndrome and Infection

Most frequent consequence of NS is recurrent infection. Bacterial infection is common type of infection which occur during relapse. Generalized edema is also the factor which act as the culture medium for bacteria. Protein insufficiency leads to immune cell depletion. In this ailment, the leucocyte's bactericidal function is reduced, which is exacerbated by immunosuppressive medication (steroids, for example). Due to hypovolemia, splenic perfusion will be reduced. There is also a loss of specific complement components in urine that opsonize some bacteria, which raises the likelihood of infection. The most common infection is spontaneous peritonitis. Cellulitis, UTI, Sepsis, and Pneumonia are also prevalent [11].

AIMS AND OBJECTIVES:

- To elaborate the Ayurvedic correlation of Nephrotic Syndrome.

- To review the literature for Ayurvedic management of Nephrotic Syndrome.

MATERIALS AND METHODS

Classical texts of Ayurveda like Charaka Samhita, Sushrut Samhita and modern textbook including digital media, Ayush Research Portal, PubMed, Google Scholar and other websites on internet regarding the subjects were used as source material in the study.

Ayurveda approach of Nephrotic Syndrome

The majority of research indicates that the condition is linked to an immune system. It is firmly considered that an excessive immune mediated response is causing the damage to the glomerular membrane, resulting in an autoimmune disorder-like pathophysiology for glomerular injury. However, no particular immune globulin depositions were seen in the glomerulosa. T cell-mediated immunologic response with aberrant lymphocyte release by T cells is hypothesized to affect the glomerular basement membrane. During the relapse, B cells are also implicated. In light of the foregoing, an overactive immunological response by the immune system is the most likely source of Minimal change pathogenesis [12].

For all practical purposes, immunity in *Ayurveda* is constantly contrasted with *Ojas* as well as *Kapha*. Because immune suppression results in great symptom recovery, an increased immunological response, sometimes known as auto immunity, has been expected. This is quite similar to the idea of *Ojas* aberrations such as *OjoVisramasa* and *OjoVyapad*. Meanwhile, *Kapha* is involved as a vitiating component since *Kapha* is constantly concerned with the body's immune system (*Bala*, *Avalambhana*, etc.). *Balyavastha* is the stage in which *Kapha* is dominating, implying that the person is functionally undeveloped and in the developing process *Kapha* instability causes variations in the immune system [13]. *OjoVyapad*can be aberrations of *Ojas* have been well predicted since we know that increased immune response or an aberrant kind of immune response causes harm to the own body cells. This syndrome is quite similar to *OjoVyapad*, in which the functions of the *Ojas* vary from normality, resulting in function reversal. *OjoVyapad* is shown in the form of *Stabdata*, which is restricted bodily motions, rigid, firm body parts, and *Gurugatrata*, which is inferred by weight increase owing to disturbed fat metabolism and fluid storage. Meanwhile, *Vata Shopha* denotes a generalized pitting shifting form of edema. *Varna Bheda* can arise as a result of the disease's glossy, sparkling appearance and pale body. *Glani* in the form of Discomfort is also warmly received, both physically and mentally [14].Another *Ojas* aberration, *OjoVisramasa*, has been seen in cases with Nephrotic Syndrome. *OjoVisramsa* manifests with symptoms similar to *SandhiVislesha*, which is instability of *sandhi* with involvement of *Sleshaka Kapha*. Meanwhile, *Gatra Sadana* or disc fort or bodily instability is observed as a result of protein loss. *Doshachavana*, or disruption of *Dosha* balance, was also seen. *Kriyasannirodha*, or exercise intolerance, dyspnea, and other symptoms are also observed [15].Nephrotic syndrome is known as auto immune disease in which the immune system of the body become weak, so it can also correlates with the *Oja Kshaya*. This will be shown as generalized physical weakness, malaise, disrupted psychological state, unpleasant mental sensations, *Murcha*, *Maansa Kshaya*, *Moha*, *Pralapa*, and, finally, *Marana*. *Jeevaneeya Aushadha*, *Ksheera*, *Rasa* (*Maansa Rasa*) is the treatment for such situations - in steroid dependent position [16].Thus, by all of the foregoing causes, there will be involvement and aberrations of Ojas, but what disease leads to involvement of Ojas must be known before therapy is planned.

Medhovaha Srotodusti is seen in the Nephrotic Syndrome, *Moola* of *Medhovaha Srotas* are *Vrikka* and *Vapavahan*. *Vrikka* is

a part of nephrological organ instead of urinary one. The word *Vrikka* can refer to both the kidney and the adrenal gland. The adrenal gland is responsible for the synthesis of many essential fat-metabolizing hormones. Fat metabolism is clearly disrupted in Nephrotic syndrome [17]. Hypercholestremia is clearly seen in NS due to disturbed fat metabolism. Involvement of *Vrikka* in Nephrotic Syndrome indicates the vitiation of *Medhovaha Srotas* due to *Dhatwagni Mandya* of *Meda Dhatu*. Management of *Medhovaha Srotas* can be done in Nephrotic Syndrome. *Dhatwagni* controls metabolism at the cellular level through cellular metabolism and intracellular enzymatic processes. Any reason that results in *Dhatu Agnimandya* at a different Dhatu level results in - Abnormal *Dhatu vridhi* or abnormal depositions of hazardous, undesirable substances. Excess *Dhatwagni* causes depletion of bodily tissues. When such aberrant *Sama* is collected in tissue and cells, it eventually results to *Ama Visha* if left untreated. *Aam Visha* which is water insoluble shows the antigenic effect of the body tissues leads to disturbance in homeostasis of immune system ultimately results in disturbance in the functional integrity of body [18]. In addition to this other major presenting symptom in nephrotic syndrome is edema, which eventually becomes generalized and more problematic to the patient's participation. As a result, the role of *UdakaVaha Srotas* is apparent. The loss of albumin is primarily responsible for the improper distribution of fluid in various compartments. The fundamental therapy for *UdakaVaha Srotodusti* is to return fluid to the vascular compartment by raising plasma protein pressure [19].

Ayurvedic Management of Nephrotic Syndrome

Nephrotic Syndrome is known as an auto immune disorder, in which Oja play a very important role in maintaining the immunity of body. *Oja* modulates the immune system and control exaggerated reaction in the body. Drugs and regimen considered to be a very necessary key to health. In order to increase *Oja* in body, Satwik Ahara should be taken [20]. Drugs and diet which are *Vrishya* and enriched with *Snigdha, Madhura, Prasad, Guru, Sheeta* and *Prasanna* properties which are similar to the properties of *Oja* in body. Immune modulator drugs like *Guduchi, Punarnava, Pippali, Ashwagandha* etc, are the drug of choice. Immune modulation can also be achieved by food and regimen. *Satwik* meals such as *Ksheera, Ghrita*, and *Nitya Ksheera, Shadrasayukta Ahara, Nitya Ghrita Sevan*. Following food consumption guidelines, avoiding *Asatmya ahara, Paryushit* (Junk food), quick food, and canned goods limit salt consumption, which results in *Oja Kshaya,* should be avoided in excess. Other regimens, such as proper exercise, *Sadvritta, Swasthavritta*, and faith treatment, will also boost *Oja [21].Yoga* and *Pranayama* are also beneficial.

The main presenting symptom in Nephrotic Syndrome is edema which can be occur due to *UdakaVaha Srotodusti.* Edema can be managed with diuretic drugs. In Ayurveda the diuretic drugs can be correlates with the *Mutrala Aushadha. Mutrala* drugs in Ayurveda are diuretic as well as renal protective. Drugs like *Punarnava, Gokshura, Sariva, Usheera, Shilajatu, and Haridra* can be given which perform as diuretic and renal protective function in body [22].*Rasayana* therapy are tonic to the *Vrikka* / Kidney and *Medhovaha Srotas* should be administered to ensure the regeneration of damaged tissue such as *Nisha, Amalaki Rasayana, Punarnava* and *Shilajithu* can be provided that are better management to the renal system [23].

Role of drugs with Nephroprotective activity

***Guduchi* (Tinospora cordifolia):** *Guduchi's* anti-inflammatory, antioxidant, and immunomodulatory properties can provide relief from nephrotic syndrome [24]. The chronic kidney disease, nephrotic syndrome, which is common in children,

caused by T lymphocyte malfunction, decreased podocyte function, and changes in vascular permeability. Standardized extract of T. cordifolia has been utilized to treat renal illnesses such nephrotic syndrome and chronic recurring urinary tract infections caused by E. coli, Klebsiella, and other gram-negative bacteria in an innovation for which patent has been issued to Acharya et al. [25]. Another research work, Swiss albino mice were used as a model to examine the impact of Tinospora cordifolia on urotoxicity brought on by an acute dosage of cyclophosphamide (CP). An alcoholic extract of the plant T. cordifolia (200 mg/kg i.p.) was given for five days to lessen the urotoxicity caused by CP (1.5 mmol/kg body wt. i.p.). It was clear from the morphological study of the bladder as well as from the lowered levels of urea nitrogen and protein in the urine [26].

***Punarnava* (Boerhaavia diffusa):** Some research works shows through HPTLC examination, the extracted phenolic aglycone (BD1) in the methanolic extract of B. diffusa roots was standardised, and the amount of BDE1 in the extract was determined to be 5.755% w/w. The effects of the extract on nephrotoxicity caused by cisplatin (10 mg/kg b.w.i.p.) in albino rats were investigated. By measuring the parameters serum urea, creatinine, blood urea nitrogen, and antioxidant parameters such lipid peroxidation, super oxide dismutase (SOD), catalase, and no scavenging activities, the Nephroprotective and nephrocurative potential of BDE was assessed [27]. Another research work states that *Punarnava* showed good diuretic activity on dose 1ml/100gm of normal saline alternate day for 15 days. Diuretic activity of B. diffusa is due to Beta-ecdysone which can be extracted through roots [28].

***Pashanbheda* (Aerva lanta):** In albino rats of either sex, acute renal damage caused by cisplatin and gentamicin was examined to determine the Nephroprotective efficacy of the ethanolic extract of the complete plant of Aerva lanta. The extract found to effective in the reduction of the increased blood urea and serum creatinine in the curative regimen and it normalised the histological abnormalities in the cisplatin model. The rats receiving the preventative regimen of gentamicin also responded well to the ethanol extract at 300 mg/kg. The findings imply that Aerva lanata's ethanolic extract has significant Nephroprotective effect and low toxicity, and that it may play a potential role in the treatment of acute renal failure brought on by nephrotoxins like cisplatin and gentamicin [29].

***Brihat Gokshura* (*Pedalium murex*):** The ethanolic extract of P. murex's dried fruits was tested for its ability to protect rats' kidneys from damage brought on by the drug cisplatin. Cisplatin 5 mg/kg was administered intraperitoneally to Wistar rats to cause nephrotoxicity. Using serum creatinine, blood urea, and change in body weight as indications of kidney injury, the effect of concurrent administration of P. murex ethanolic extract at a dosage of 250 mg/kg administered by oral route was assessed. Cystone was a widely used medication. The extract considerably reduced the nephrotoxicity brought on by cisplatin. Body weight, serum creatinine, and urea levels all changed noticeably. The ethanolic extract was found to considerably protect the kidneys from harm. Some recent studies states that P. murex's dried fruit ethanolic extract is superior herb as a Nephroprotective. [32].

***Shunthi* (Zingiber officinale):** When Wistar rats were exposed to gentamicin-induced nephrotoxicity, the effects of an ethyl acetate extract of fresh Zingiber officinale rhizomes and dried fresh juice of fresh Zingiber officinale rhizomes were assessed. Gentamicin was administered intravenously for eight days at a dose of 100 mg/kg/day, resulting in nephrotoxicity. Effect of concurrent oral administration of Zingiber officinale fresh juice extract and

ethyl acetate extract at a rate of 200 mg/kg/day. The groups which were received ethyl acetate and dried fresh juice extract of Zingiber officinale, there were noticeable diminution of the gentamicin-induced glomerular congestion, peritubular and blood vessel congestion, epithelial desquamation, accumulation of inflammatory cells, and necrosis of the kidney cells. The extracts also reversed the gentamicin-induced rise in serum levels of blood urea nitrogen, serum urea, serum creatinine, and serum uric acid. The juice and extracts both have strong Nephroprotective properties. [30, 31].

Varuna **(Crataeva nurvala):** Some research works shows that Crataeva nurvala's alcoholic extract given in doses of 250 and 500 mg/kg for 10 days, it demonstrated protective effect against cisplatin's 5 mg/kg-induced nephrotoxicity. The findings indicated that the alcoholic extract considerably changed the dysfunction of renal proximal tubule cells by lowering blood urea nitrogen, creatinine, lipid peroxidation, glutathione, and catalase concentrations [33].

Sahadevi **(Vernonia cinerea):** Some study was conducted on albino rats that the alcoholic extracts of the parts of Vernonia cinerea was effective in cisplatin-induced nephrotoxicity at a dose of 6 mg/kg, i. p. The alcoholic extract showed both curative and prophylactic activity on the other hand ethyl acetate extract has exhibited good prophylactic activity and petroleum ether extract showed moderate protection against cisplatin-induced toxicity [34].

Manjishtha **(Rubia cordifolia):** Study states that the hydro-alcoholic extract of Rubia cordifolia was investigated against cisplatin induced nephrotoxicity in Swiss albino mice. A double arm study was conducted in which one group of animals were given Cisplatin at a dose of 12 mg/kg body wt. through intra-peritoneal route while another group of animals were given hydro-alcoholic extract of Rubia cordifolia at different doses along with cisplatin treatment. The study shows that the extract significantly decreased the cisplatin induced nephrotoxicity. Remarkable changes was observed in the level of Serum Urea and Serum Creatinine. Lipid per-oxidation in the kidney and liver tissues was also considerably reduced in Rubia cordifolia. The conclusion was done on the basis of study that the hydro-alcoholic extracts of Rubia cardifolia shows the Nephroprotective role [35].

Haridra **(Curcuma longa):** A research was carried out on an animal model, three medicinal herbs Petroselinum sativum, Eruca sativa and Curcuma longa, alone and in combination were investigated against gentamicin induced nephrotoxicity in rats, the study concludes that Curcuma longa has Nephroprotective and diuretic effects [36]

Herbomineral Preparations in Nephrotic Syndrome

Chandraprabha Vati**: -** *Chandraprabha Vati* contains 37 ingredients of plant and mineral origin. Ayurvedic medicines can be used to safely and efficiently treat renal parenchymal illness that has been detected early. In this situation, Chandraprabha Vati, which has *Rasayana* qualities, might be employed. It aids in parenchymal tissue regeneration, limiting additional harm to the renal parenchyma. [37] Chandraprabha Vati functions synergistically. It possesses healing, cooling, astringent, diuretic, antibacterial, antiseptic, anti-inflammatory, and effects. It restores the genitourinary tract's regular activities and detoxicate it. It supposedly increases the body's resilience against infection. Chandraprabha Vati is very efficient against E. coli, Klebsiella, pseudomonas, and mixed infection, which are typically encountered in urinary tract infection, and the patient exhibited significant recovery with it. [38]

Gokshuradi Guggulu**: -** *Gokshuradi Guggulu* (Gg) is multi-herbal formulation

having nine ingredients which is known to be Ayurvedic, traditional and folkloric medicine to promote urinary out flow. A study was conducted on 30 rats examined the diuretic potential of Gg using rat hydrated diuretic assay (Ratnasooriya et al., 2004). This assay is validated, rapid, reliable, sensitive and a widely used method to assess the potential of diuretic and antidiuretic drugs. [39]

Agnitundi Vati: **-**A case study shows the effective results of *Agnitundi Vati*, during the initial phase of treatment, multiple medicines were used but in-spite of vigorous efforts, limited success was seen in symptoms and investigations; twice it happened that oral steroid therapy was given along with Ayurvedic medicines to control the symptoms. Benefit was such that steroid free time has increased and duration of next steroid therapy was cut short to 6 weeks compare to the previous therapy of 8 weeks. [40]

Yavkshaar**: -** *Yavkshaar* is known for its diuretic properties, which means it promotes the production and elimination of urine. This property aids in flushing out toxins and excess fluids from the body, supporting kidney health and helping to relieve urinary disorders.

DISCUSSION

Nephrotic Syndrome characterised by proteinuria, hypoalbuminemia and generalized edema around eyes especially in the morning. NS causative factors may be direct or indirect. Minimal Change Nephrotic Syndrome and Focal Segmental Glomerulosclerosis can be considered as direct or primary cause and Meanwhile, Diabetic Nephropathy, Systemic Lupus Erythematosus, Sarcoidosis, Syphilis, Hepatitis B, HIV, Amyloidosis, Vasculitis are known to be secondary or indirect cause of Nephrotic Syndrome. It is one of the most concern disease in children due to changes in the activity of renal system and alteration in the glomerular basement membrane. As the disease is auto immune in nature, in Ayurveda *Ojas* is known to maintain the immunity of the body. The vitiation in *Ojas* like *OjoVyapad*, *OjoVisramasa* and *OjaKshaya* leads to certain type of autoimmune disorders. The management of the contemporary medicine is only steroids, due to this many patients have steroid dependent Nephrotic Syndrome. To reduce the dependability on steroids of patients, Ayurvedic management is proved to be useful and fruitful way. In the management of Nephrotic Syndrome, whether the patient is pre diagnosed or diagnosed for the very first time. Foremost target of Ayurveda management is to free the patients from steroids as well as enhances the immunity. First step of management in Ayurveda is to continue the previous medications of the patient along with the Ayurvedic Medications. Enhancement in immunity of patients followed by gradual tapering of steroids and starts all Ayurvedic medication in mean time. In Ayurveda, many drugs show Nephroprotective activity. *Punarnava* shows the Nephroprotective, Nephrocurative potential and diuretic activity through the chemical extracts. Research work states that *Brihat Gokshura* protects the kidney which was damaged by the contemporary medications. Nephroprotective efficacy of the ethanolic extract of the complete plant of Aerva lanta has been shown by the research. Some drugs like Tinospora cardifolia is well known for anti-inflammatory, antioxidant, and immunomodulatory properties can provide relief from nephrotic syndrome. Some other herbs like *Varuna*, *Haridra*, *Manjishtha* and *Sahadevi* are also helpful in reducing the toxic effects of contemporary medications and improves the immunity. All the herbs which are mentioned in the present article are proved as Nephroprotective by the experimental studies on animal models.

CONCLUSION

Based on above discussion, it is concluded that nephrotic syndrome occurs due to

vitiation of *Oja* and *Medhovaha Srotas dusti*. Therefore, such herbs & herbomineral formulation are required, which not only break down the pathogenesis of nephrotic syndrome but also make homeostasis among the vitiated *Doshas*. Various experimental & clinical trial proved that herbs*Punarnava, Pashanbheda, Brihat Gokshura, Guduchi, Varuna, Haridra, Manjishtha, Sahadevi, Shunthi* and herbomineral preparation like *Chandraprabha Vati, Agnitundi Vati, Gokshuradi Guggulu, Yavkshaar*, etc. are found effective not only to break down pathogenesis and manage various feature like *shotha* (oedema) in human beings. In this way, Ayurveda can provide safe, cheap, untoward free solution of nephrotic syndrome.

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