

Effect of Integrated Naturopathy and Yoga therapies in a patient with Nephrotic Syndrome: A Case Report

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ABSTRACT:

Nephrotic syndrome (NS) is important kidney disease that affect three out of every 100,000 adults are every year. The objective of this case report is to find the effect of integrated naturopathy and yoga therapies (INYT) in a patient with NS. A 22-year-old man was experiencing palpitations, exhaustion, foamy and foul-smelling urine for the past 6-months and visited our outpatient department on 11-January-2023. Urine analysis showed an increased levels of protein (50 mg/dL) and red blood cell (RBC) (>1 mg/dL) and thus diagnosed as NS. He is not under allopathic medication. For abovementioned complaints, he was taken Ayurvedic medicine such as *Prabhakar Vati* 500 mg 1 tablet (1-0-1) and *Chandraprabha Vati* 500 mg 1 tablet (0-1-0) for the past two months and discontinued couple of weeks ago without medical advice. He received INYT along with an herbal concoction (50 ml) daily, for 15 days in inpatient department (IPD). In follow-up he was advised to take herbal concoction for three days a week and to practice yoga therapy daily once either in the morning or evening as in IPD hospital stay. Results showed a reduction in perceived stress, hematuria and other urinary symptoms after discharge from IPD. Moreover, proteinuria and hematuria values were returned back to normal range and he got rid of NS symptoms like foul and foamy urine after 151 days of follow-up.

KEYWORDS: Naturopathy, Nephrotic syndrome, Yoga.

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INTRODUCTION:

Nephrotic syndrome (NS) is characterized by massive proteinuria (>50 mg/kg/day) responsible for hypoalbuminemia (<2.5 g/dl) with resulting hyperlipidemia (serum cholesterol >200 mg/dl) and edema. Every year, three out of every 100,000 adults are affected by NS. About 80-90% of adult cases of NS are idiopathic.^[1] Yoga and naturopathy is a holistic medical strategy enhances metabolic and cardiovascular health and helps to lessen the burden of non-communicable diseases (NCDs)^[2]. A previous case study done by kraleti, et al., reported that practice of yoga for 1 year showed a reduction in protein level of urine in patient with NS^[3]. However, there are no studies shown the effect of integrated naturopathy and yogic therapies (INYT).

CASE REPORT:

A 22-year-old man who had been experiencing palpitations, exhaustion, shortness of breath while exertion, passing foamy and foul-smelling urine for the past six months visited our outpatient department on 11-January-2023. He has a family history (father) of kidney failure. For the above complaints he was taking Ayurvedic medicine such as Prabhakarvati 1 tablet.(1-0-1) and Chandraprabhavati 1 tablet (0-1-0) for the past two months and discontinued couple of weeks ago without medical advice.

Clinical Findings:

On examination, presence of foamy and foul-smelling urine with normal frequency of urination were noted. The overweight (27 kg/m²) subject has vitals within normal range as 130/90 mmHg, 78 beats/ minute and 20 cycles/ minute of blood pressure, pulse rate and respiratory rate respectively.

Urine analysis showed an increased levels of protein (50 mg/dL) and red blood cell (RBC) (>1 mg/dL). The timeline was mentioned in figure 1.

Diagnostic assessment:

Blood and urine analysis:

Renal function test (RFT) [urea and creatinine] and color, appearance, specific gravity, traces of proteins and blood in urine are evaluated using blood and urine analysis respectively on a day before admission in IPD. The details are given in table 2.

Perceived stress scale (PSS):

The PSS is a 10-item questionnaire used to gauge individuals' self-reported levels of stress by examining their thoughts and emotions from the preceding month. With a possible score range of 0 to 40, each question is given a score between 0 (never) and 5 (very often). A higher score denotes a greater level of stress^[4].

THERAPEUTIC INTERVENTION:

Patient received INYT that includes 2-hours of general yoga sessions [i.e. loosening yoga techniques (*pawanmuktasana series part-I*), yoga postures (*asanas*), breathing practices (*pranayama*), instant relaxation techniques (IRT), and deep relaxation technique (DRT) in morning and evening daily. Naturopathy interventions such as renal pack, neutral spinal spray, neutral hip bath, gastro hepatic pack, acupuncture and diet therapy [uncooked plant-based diet (i.e. naturopathy diet) along with an herbal concoction (50 ml) in empty stomach made up of fresh leaves of *Phyllanthus niruri* (keezhanelli) (5 g) + fresh leaves of *Boerhavia diffusa* (mookirattai) (5 g) + 2 numbers of *Allium ascalonicum* (small onion) boiled in 100 ml which condensed to 50 ml

were provided daily Details of the INYT are provided in table 1.

In Follow-up:

- Advised to drink above mentioned herbal concoction in empty stomach at morning for weekly three days
- Advised to practice yogasanas and pranayama practices (Table 1) as practiced in IPD stay

Follow-up and outcomes:

In follow up, patient was advised to take herbal concoction (50 ml) in empty stomach for three days a week, practice yoga asanas like *Vakrasana*, *Ardhakatichakrasana*, *Bhujangaana*, *Supta udarakarshanasana*, *Tiryaka tadasana*, *Pranayamas* like *Vibhaga pranayama*,

Nadishodhana pranayama and *deep relaxation technique (DRT)* daily once either in the morning or the evening as taught during the inpatient (IP) hospital stay. His adherence to intervention was good and was monitored through a patient diary, which was checked when the patient visits the outpatient (OP) department once a week. Results showed a reduction in hematuria (RBC in urine), PSS score and NS symptoms such as foamy, burning, foul-smelling urine with no change in proteinuria at the time of discharge (table 2). Urinary protein and red blood cell counts were considerably reduced at follow-up-I (the 43rd day following IP discharge) and returned back to normal range at follow-up-II (151 days after IP discharge) (Table 2).

Table 1: Details of the intervention provided to the patient in IPD

Specific therapy	Specific treatment	Frequency	No. of days
Yoga therapy	<i>Nadishodhana pranayama</i>	5mins	Daily
	<i>Sectional breathing</i>	10mins	On alternate days
	<i>Deep Relaxation Technique (DRT)</i>	20mins	On 5 th , 10 th and 15 th day
	<i>Yogic breathing</i>	20mins	On 11 th day
	<i>Vakrasana</i>	2mins	Daily
	<i>Ardha katichakrasana</i>	2mins	Daily
	<i>Bhujangasana</i>	2mins	Daily
	<i>Supta udharakarshanasana</i>	2mins	Daily
	<i>Tiryaka tadasana</i>	2mins	Daily
Hydrotherapy	Plantain leaf bath	40mins	On 5 th and 15 th day
	Neutral spinal spray	20mins	3 days once
	Steam bath	7mins	On 10 th day
	Gastro hepatic pack (GH pack)	20mins	4 days once
	Neutral hip bath	20mins	3 days once

	Renal pack	20mins	On alternate days
Mud therapy	Full mud bath	40mins	7 th , 13 th and 17 th day
Acupuncture	Acupuncture with moxibustion (LIV 3, SP 6, ST 36, UB 23 & 25)	20mins	First and last 8 days
	Auriculotherapy	1min	On alternate days
	Meridian Massage (back Shu)	10mins	Daily
	Ginger moxa (umbilicus)	10mins	3 days once
	Reflex to both soles	30 mins	On alternate days
Manipulative therapy	Partial massage to abdomen	20mins	4 days once
	Seed therapy (kidney bean-kidney area, lemon seed-liver area, sujok-liver area)	2 hours (by self-pressing)	On alternate days
Chromotherapy and Magnetotherapy	Magnetic belt to abdomen	10mins	On alternate days
	Yellow glass exposure	20mins	On 5 th and 15 th day
Diet Therapy			
Timings	Food Items	Quantity	Servings/day
07:30 AM	Juice made by any one food of the followings [Amla, lemon with mint, mint with coriander, Curryleaves (20 ml of extract with 180 ml of water)] [Plantainpith, Raddish, Bottlegourd, Cucumber, Ashgourd, wheatgrass, carrot, beetroot (100 ml of extract with 100 ml of water)]	200 ml	1
09:30 AM	Vegetable salad made by mixer of 2/3 of the followings (carrot, beetroot, snake gourd, bottle gourd, ivygourd, chow-chow, coconut, groundnut, cucumber, cabbage, capsicum, onion, tomato, mango)	120 g	1
	Fruits salad made by mixer of 2/3 of the followings (pineapple, papaya, muskmelon, orange, mosambi, sapota, watermelon, pomegranate, gooseberry, mango)	180 g	1
12:00 Noon	Juice made by any one food of the followings [Amla, lemon with mint, mint with coriander, Curryleaves (20 ml of extract with 180 ml of water)]	200 ml	1

	[Plantainpith, Raddish, Bottlegourd, Cucumber, Ashgourd, wheatgrass, carrot, beetroot (100 ml of extract with 100 ml of water)]		
02:00 PM	Fruits salad made by mixer of 2/3 of the following (pineapple, papaya, muskmelon, orange, mosambi, sapota, watermelon, pomegranate, gooseberry)	180 g	1
04:30 PM	Juice made by any one food of the followings [Amla, lemon with mint, mint with coriander, Curryleaves (20 ml of extract with 180 ml of water)] [Plantainpith, Raddish, Bottlegourd, Cucumber, Ashgourd, wheatgrass, carrot, beetroot (100 ml of extract with 100 ml of water)]	200ml	1
07:00 PM	Vegetable salad made by mixer of 2/3 of the following (carrot, beetroot, snake gourd, bottle gourd, ivygourd, chow-chow, coconut, groundnut, cucumber, cabbage, capsicum, onion, tomato)	120g	1
	Fruits salad made by mixer of 2/3 of the following (pineapple, papaya, muskmelon, orange, mosambi, sapota, watermelon, pomegranate, gooseberry)	180g	1

Note: Advised to take herbal concoction (50 ml) in empty stomach for daily, made up of fresh leaves of *Phyllanthus niruri* (keezhanelli) (5 g) + fresh leaves of *Boerhavia diffusa* (mookirattai) (5 g) + 2 numbers of *Allium ascalonicum* (small onion) boiled in 100 ml which condensed to 50 ml during hospital IPD stay.

Table- 2: Baseline, during and post assessments of the patient

Scales	Pre (10 th Jan)	Post (30 th Jan)	Follow up (14 th Mar)	Follow up (30 th Jun)
Perceived stress scale (PSS)	21 (moderate stress)	9 (low stress)	-	-
Renal function test (RFT)				
Urea (12.8–42.8 mg/dL)	24	12.9	14	13
Creatinine (0.9-1.3 mg/dL)	1	0.7	0.8	0.8
Urine analysis				

Color (lite yellow)	Yellow	Lite yellow	Straw yellow	colorless
Appearance (clear)	Clear	Clear	clear	clear
Specific gravity (1.010-1.030)	1.020	1.010	1.010	1.000
PH (4.5-8)	5.5	6.0	5.5	6.0
Proteins (<10 mg/dL)	50	50	10	< 10
Blood (<0.03mg/dL)	≥ 1.0	0.50	0.10	0.03

Note: PH=Potential of hydrogen;

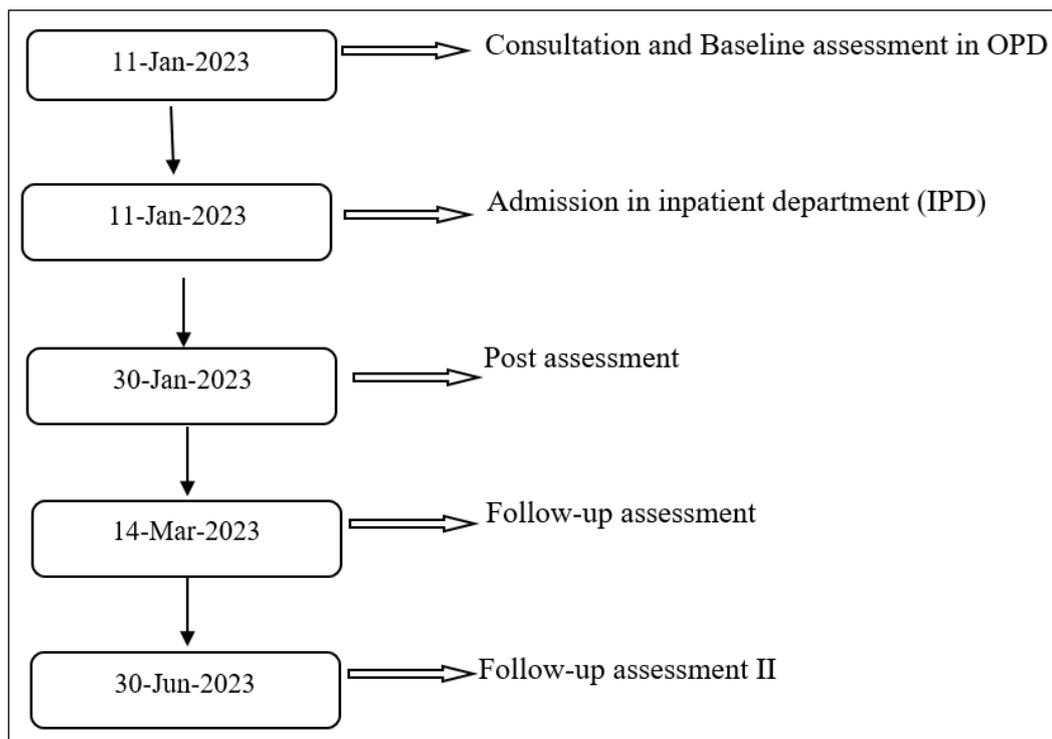


Figure 1: Timeline:

DISCUSSION:

Results showed a reduction in PSS score [from 21 (moderate stress) to 9 (low stress)], hematuria (RBC in urine), and other urinary symptoms [i.e., foamy, burning, foul-smelling urine] with no change in proteinuria at the time of discharge. Urinary protein and red blood cell counts were considerably reduced at follow-up-I, and returned back to normal

range at follow-up-II. It indicates that INYT is effective in reducing stress, proteinuria and other urinary symptoms of patients with NS when it is provided in long-term.

Stress, inflammation, and oxidative stress plays a vital role in the development of NS and deterioration of NS symptoms. plant-based naturopathy diet and herbs reduces inflammation, and oxidative stress and thus

are appealing, advantageous, and practical complementary treatments to slow the progression of NS and improve the renal function^[5]. Phytochemicals that are present in *Boerhavia diffusa* (mookirattai) [i.e. flavonoids, alkaloids, glycosides, and sterols] contains nephroprotective properties and antioxidant activity^[6]. *Phyllanthus niruri* (keezhanelli) contains a number of bioactive compounds such as ricinolic acid, phyllanthin, lignans, flavonoids, glycosides, tannins, alkaloids, ellagitannins, triterpenes, phenyl propanoids, and steroids that produce anti-inflammatory, anti-tumor, antioxidant, and diuretic effects^[7].

Likewise, *Allium ascalonicum* (small onion) contains sulfur, flavonols, and phenols that produce antifungal, antiviral, anti-inflammatory, and antioxidant effects^[8]. The reduction in stress and improvements in NS symptoms might attribute to the regular yoga practice^[9], hydrotherapies such as neutral spinal spray, neutral spinal bath^[10], renal pack etc., meridian massage, foot reflexology^[11], acupuncture and moxibustion^[12] that helps to reduce sympathetic nervous system activity, which in turn increases parasympathetic activity and sympathovagal balance^[9,10,11,12] reduce inflammation and oxidative stress that are responsible for the development of NS.

CONCLUSION:

The study results suggests that INYT helps to reduce stress, disease symptoms and improve renal function of a patient with NS. However, as this is a single case study, it is difficult to arrive a definite conclusion, hence further studies are recommended with the larger sample size to validate our study results.

Strengths of this study:

This is the first case, reporting the effects of INYT in a patient with NS with follow-up. INYT was well tolerated and no adverse effects were reported by the patient throughout the study period.

Limitations of this study:

Validity and reliability of this result may vary because of single case. Hence, further well-planned studies with large sample size are required to validate our results.

Ethical consideration:

Patient provided a written informed consent to participate and publish this study.

Conflict of interest: The author declares that there is no conflict of interest.

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