

EFFECTIVE MANAGEMENT OF SNAKEBITE INDUCED ACUTE KIDNEY INJURY BY USING AYURVEDIC INTERVENTIONS: A CASE REPORTAvira Gautam¹, Manish Grover² and Dr. Gurpreet Singh*

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ABSTRACT

Acute kidney injury (AKI) is a condition arises when the normal renal functioning is disturbed over a short time period i.e. days or weeks. The persistent loss of kidney functioning can lead to severe conditions like chronic kidney disease and end-stage kidney disease (ESKD). Kidney transplant, peritoneal dialysis and hemodialysis are some methods used in allopathy to treat these conditions. These therapies and treatments are very expensive and unaffordable by the people of low income and middle-income countries. Therefore, an immediate treatment of AKI can reduce the chances of severe diseases. In India, Ayurveda is a conventional practice which is used since ancient times to treat number of disorders without any side effects. A case report of acute kidney injury patient using Ayurvedic treatment is well defined here. A 75-year-old widow Hindu, non-alcoholic, nonsmoking female diagnosed with acute kidney presented in Shuddhi Ayurveda Clinic, Amritsar on 6 July 2021. The patient was clinically assessed by jeebha pariksha (tongue examination) and naadi pariksha (pulse examination). Patient was administered with Ayurvedic medicines for the particular time period and investigated for the functioning of kidney and hemoglobin. Ayurvedic treatment indicated an improvement in urea, creatinine and uric acid level.

KEYWORDS: Acute Kidney Injury, Ayurveda, Mutraroga, Chandarvati.**INTRODUCTION**

Acute kidney injury (AKI) is a condition of abrupt reduction of renal functioning during a short period of time i.e. in terms of days or weeks. The changes in the renal functioning include a significant reduction in the glomerular filtration rate that ultimately increases the serum concentration of urea nitrogen and creatinine and proteinuria.^[1] It has globally high rates of morbidity and mortality.^[2] In developed and developing countries, the AKI characteristics vary due to variation in socioeconomic patterns, government health expenditures, infrastructure of health services and etiology of AKI.^[3] But the cases of AKI are encountered mostly from the rural areas where people are prone to infectious diseases and animal venoms with poor obstetric care.^[4] AKI resulted from snakebite envenomation due to inflammatory and hemorrhagic disorders is the most frequent fatal clinical complication in the developing countries that may lead to chronic kidney disease and end-stage kidney disease (ESKD) due to persistent loss of renal functioning. It is considered as a short-term life-threatening disease.^[5-8] As kidneys are more prone to venom toxicity, a wide range of renal pathological changes are involved. Proteinuria, haematuria and acute renal failure are major complications of snakebite envenomation.^[9] Hemotoxic envenomation increases the chances to develop AKI to 12% to 30% or more.^[10]

Enzymatic toxins in snake venom cause a remarkable disturbance in all the cells kidney including glomerular, tubulo-interstitial and kidney vasculature. Snake envenomation causes ischaemia and decreased kidney blood flow due to various factors such as systemic bleeding and vascular leakage, proteolytic degradation of the glomerular basement membrane by snake venom metalloproteinases (SVMPs), microthrombi deposition in the kidney microvasculature (thrombotic microangiopathy), direct cytotoxic action of venom, systemic myotoxicity (rhabdomyolysis) and myoglobin accumulation in kidney tubules.^[11] In Ayurveda, a term *Vrikka* is used to denote kidney which is considered as the site of origin (*Moolsthana*) of channels through which nutrition to the adipose tissue is transported (*Medovaha Srotas*). Kidney disorders are related with *Mutraroga*.^[12,13] There are various evidences of effective management of such diseases in Ayurveda. A case study on Ayurvedic intervention of acute kidney injury is well defined.

CASE REPORT

A 75-year-old widow Hindu, non-alcoholic, non-smoking tea addict female patient diagnosed with acute kidney injury approached Shuddhi Ayurveda Clinic, Amritsar on 6 July 2021 with symptoms of indigestion, loss of appetite, pitting edema, headache, dizziness,

heaviness in head, fatigue, difficulty in walking and standing. The patient was suffering from these symptoms from past two months. She was also diagnosed previously with atherosclerosis, hypertension and age related brain atrophy. Patient was also suffered previously from snakebite for which she got admitted in allopathic hospital. She was undergone hemodialysis four times for this and got discharged. Patient developed acute kidney disease symptoms because of this repetitive hemodialysis. Patient approached Shuddhi Ayurveda Clinic for the ayurvedic management of her present clinical symptoms.

Patient information

Presenting complaints

The chief complaints were low appetite, sore throat, foot edema and difficulty in walking and standing.

Medical, family and psychosocial history including genetic information

The patient represented no history of any severe disease in family. There was no any other medical or genetic history in the family.

Relevant past interventions and their outcomes

The patient previously had hemodialysis procedure for four times and also presented with MRI report for brain atrophy.

Physical and Systemic Examination

On the first visit the patient was physically and systemically examined. Physical examination revealed that her weight was 54 kg with pulse rate 71/min and BP 178/88 mmHg. The body temperature was normal whereas the patient was systemically examined for her bowel (frequency and evacuation), appetite and digestion, gas, acidity, eyes, urine, sleep and mind. It was observed that she had incomplete hard bowel associated with strain, mild intensity of easily passed burps, excretion of incontinence yellow urine at night associated with urgency. Moderately disturbed sleep of normal duration with late onset. The patient was experiencing episodes of restlessness. The patient was diagnosed with snake induced acute kidney injury on the basis of her physical and systemic examination.

Clinical assessment

The patient was clinically assessed by jiwha pariksha (tongue examination) and naadi pariksha (pulse examination).

Table 1: Jeebha Pariksha (Tongue examination).

06/07/21	17/07/21	20/07/21
Whitish coating and dotted appearance	Coating and dots reduced	Coating and dots disappeared

Table 2: Naadi Pariksha (Pulse Examination).

Naadi	06/07/21	17/07/21	20/07/21
Vata	+++	++	++
Pita	+++	++	++
Kapha	++	++	++

Indications: (+++) High force (Bala), (++) Moderate force (Bala), (+) Low force (Bala).

Laboratory Assessment

Patient was investigated for the functioning of kidney and hemoglobin before and after initiating Ayurvedic treatment which indicated an improvement in urea, creatinine and uric acid level. Laboratory test results are compiled in table no. 3 and 4 respectively.

Table 3: Renal Function Test reports for the case report.

Test	06/07/21	17/07/21	20/07/21
Urea (mg/dl)	130	151	127
Creatinine (mg/dl)	5.47	4.17	3.63
Uric acid (mg/dl)	9.0	7.4	6.3

Table 4: Hemoglobin reports.

Test	06/07/21	17/07/21	20/07/21
Haemoglobin	9.1	8.2	8.1

Diet

The patient was strictly advised to avoid milk and milk based products and all those foods which can worsen the kidney issues.

Selection of Ayurvedic treatment

Patient was administered with ayurvedic medicines described in table no. 5.

Table 5: Ayurvedic medicines prescribed to the patient in this case.

Sr. No.	Ayurvedic Intervention	Dosage form	Dose	Anupana
1.	Relivon Churna	Powder	½ tbs HS	Luke warm water
2.	Kidney care capsule	Capsule	1 cap TDS	Luke warm water
3.	Chandarvati	Tab	1 tab TDS	Luke warm water
4.	GFR powder	Powder	½ tbs TDS	Luke warm water
5.	Nervine Tonic	Syrup	3 BD	Luke warm water

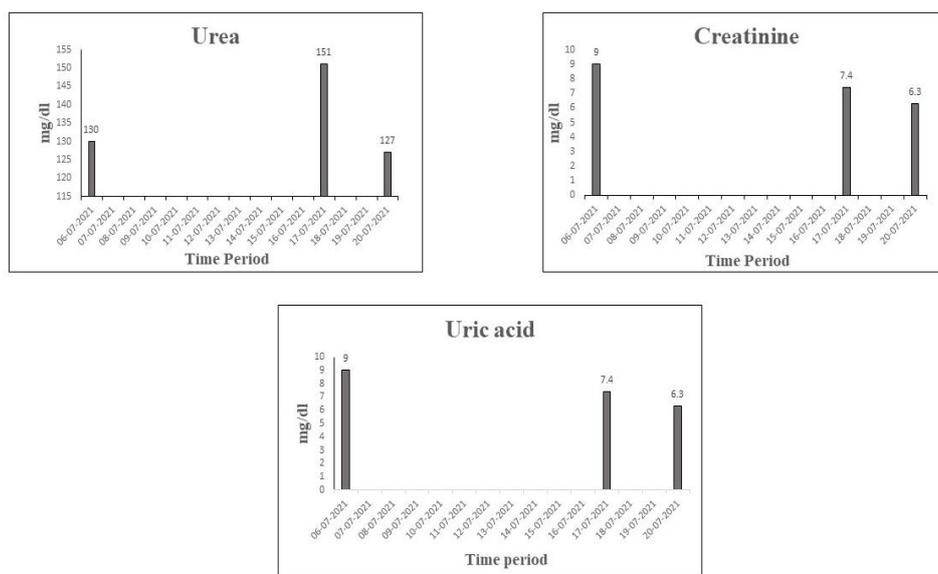
Follow-up and outcomes

Patient was followed up on particular time intervals from the start of Ayurvedic treatment Patient was advised to follow proper diet and medicines and take proper rest.

Observations and result

Clinically significant improvement was observed in foot edema and urine output of the patient. From the

laboratory investigation, it was clearly observed that in one month of treatment period there was a decrease in the increased level of urea, creatinine and uric acid which showed the improved condition of kidney. Also, hemoglobin is maintained constant. Results are shown in figure 1.

**Figure 1: Graph showing results of renal function test for the case report.****CONCLUSION**

With the use Ayurveda medicines this condition was well managed and significant improvement was observed in this case, but such cases require frequent follow ups and regular medication until the serum creatinine levels comes under normal range.

Patient perspective

Patient was very much satisfied with this ayurvedic treatment. He was feeling much relieved from the clinical symptoms after six months of ayurvedic treatment for his condition. Also there was no need of hemodialysis as suggested in allopathic treatment.

Patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has/have given his consent for clinical information to be reported in the journal. The patients understand that their names and initials will not be

published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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