

## Panchakarma-Based Detoxification Procedures Can Regulate the Hepato-renal Dysfunction: A Case Study

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### ABSTRACT:

A 33 years male patient came for consultation for left arm pain for one month with a report of hepato-renal dysfunction. He had a history of smoking tobacco and taking alcohol for a long time. The patient was accompanied by considerable work pressure and stress for one year. The patient was initially diagnosed with *Visvachi* (cervical spondylitis) as the cervical spine was found normal, and the pain was unilateral. The diagnosis was confirmed as *Mamsa gata vata* (Myofascial pain). It was thought that smoking, alcohol, and might produce Reactive Oxygen Species (ROS), which dysregulate the hepato-renal function. The Panchakarma procedure also reduces lipid peroxidase levels, reduces ROS formation, and increases the dismutase level. It also modulates metabolic expression and biological transformation. Therefore Panchakarma intervention was planned for this patient to reduce myofascial pain and purify the body in toto. *Panchakarma* is a complex multi-disciplinary approach stated from *Deepana*, *Pachana* followed by *Abhyanga* (Oil m, and *Swedana* (sweating). The *Matra vasti* (medicated enema) was planned for this case followed by *Samsarjana karma* diet therapy). There was a significant change bet total scores before and after panchakarma therapy of Fibromyalgia Impact Questionnaire (FIQ) score, HAD (Hospital Anxiety and depression score), and pain score. The abnormal liver enzymes and renal function tests were normalized after panchakarma treatment. Panchakarma therapy can treat fibromyalgia with better pain management and quality of life outcomes. It can detoxify the body by regulating hepato-renal dysfunction. More clinical evidence for panchakarma regulating liver and other metabolic enzymes and lipid homeostasis is required.

**KEYWORDS:** *Abhyanga*, Anti-oxidant, Detoxification, Liver Enzymes, *Matra vasti*, *Panchakarma Swedana*.

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**INTRODUCTION:**

*Panchakarma* is the five therapeutic procedures of detoxifying treatment (*Sodhana*), cleansing all body channels and removing toxins through natural outlets. Ayurveda is recommended each season as a preventive medical procedure or for wellness to eliminate toxins deposited in the previous season<sup>1</sup>. Each person would have a unique balance of dosas (*Vata*, *Pitta*, *Kapha*) based on the genetic and personal traits (*Prakriti*) if it is deranged, then it is linked with various health outcomes. The human body is composed of *Dosha*, *Dhatu*, and *Mala*(excreta). Three dosas are the contributors to multiple functions, *Dhatus* are structural components, and *Malas* are excretory products. The human body produces harmful substances like- urea, carbon dioxide, ammonia, and aldehydes through oxidation, reduction, and conjugation. It eliminates the toxins from cells or tissues through the breathing process, urine, sweat, and stool by the process of natural detoxification. There is ample evidence of the deposition of persistent bio-accumulative toxicants (PBT) in biological fluids (Blood, urine, breast milk, adipose tissues) due to the release of environmental pollutants like xenobiotics, synthetic chemicals, heavy metals, and pesticides into the soil, water, air, dust, and food<sup>2</sup>. Exposure to certain PBTs has been associated with adverse health effects, including endocrine disruption, neurological and reproductive effects, as well as cancers and cardiovascular diseases, which can be regarded as bioterrorism<sup>3</sup>. The concept of *Gara visa*, *Dusi visa*, and *Ama* are also taken into the discussion for elimination in *Panchakarma*<sup>4</sup>. *Tabaco* and *alcohol* lead to serious health hazards, particularly disorders of the liver<sup>5</sup>. Psychological stress or life stress can induce inflammatory oxidative stress and create dysregulation of cellular function<sup>6</sup>. The term Detoxification or

detox is very popular in the new generation. Patients have been self-motivated for detox therapy in recent years for recovery of addiction, weight loss, and thought panacea for numerous non-communicable disorders of psychosomatic origin. The other indications of detox therapy are G.I. disorders, Autoimmune disorders, chronic fatigue syndrome, endocrine disorders, liver, and renal disorders. Detoxification or detox is a process of conversion of toxic parent's compounds to nontoxic metabolic or elimination of toxin without producing any harm or injury to the patients<sup>7</sup>.

Myofascial pain or Fibromyalgia patients typically suffer from a range of symptoms that, aside from musculoskeletal pain, may also include fatigue, sleeping problems, bowel and bladder disorders, and neurological, psychosomatic, and other symptoms<sup>8</sup>. Hepato-renal dysfunction is a functional type of slowly progressive hepato-renal impairment with marked abnormalities in hepato-renal function. It is the primary stage of Hepato-renal syndrome<sup>9</sup>. There is an association between elevated serum aminotransferase levels with chronic kidney disease measures<sup>10</sup>. There is a high demand for *panchakarma*-based detoxification therapy, and new evidence is coming up in health science. The short-term detoxification reduces fatigue, increases wellness, and improves metabolic and hepato-renal function<sup>11</sup>. The lipid-soluble toxicants from adipose tissues and lipid-rich membranes move to general circulation and finally to the digestive tract for elimination. *Mamsa gata vata* is a *Vata* disorder, and *vasti* is thought to be best for it. *Vasti* (Enema) and other *panchakarma* procedures expel the toxicants from the site of deposition. The herbs present in oil may stimulate the cellular process to transport toxicants to the gut<sup>12</sup>. *Panchakarma* procedure also reduces lipid peroxidase level and reduce the formation of reactive

oxygen and increase the level of dismutase level. It also modulates metabolic expression and biological transformation<sup>13</sup>. With this background, A case of hepato renal dysfunction managed with *panchakarma-based* detoxification is described here below as cases study.

#### CASE REPORT:

A 33 years male patient came for consultation for left arm pain for one month with a report of hepato renal dysfunction. The associate complaints were Acidity, dyspepsia, and chronic fatigue for one year. He was a history of taking nicotine and alcohol for a long time. Notable work pressure and stress were accompanied by the patient for one year.

**a. Clinical finding** – The patient appeared as sick and tense. The physical examination revealed muscle rigidity of left upper arm and restricted movement of left shoulder joint. His *Prakruti* is *Pitta vata* with *hina Ahara Shakti* (appetite) and *madhyama*(medium) all *dosha vidha parikkshya*(Ten fold examination). His *nadi* was *vata* and *jivha*( Tongue ) was *amalipita*. His hematological tests reveal Hb%-14.5mg/dl, TLC-9100/cumm, total platelet count -1.62 laks/cumm, ESR- 07 1<sup>st</sup> hour and initial biochemical tests were Alkaline phosphatase 182U/L, SGPT-155i.u/l,SGOT-74i.u/l, urea-56 mg/dl, creatinine-1.8gm% , cholesterol - , 206mg/dl, Triglyceride 230mg/dl . His RA factor, CRP and ASO titer were negative. The x-ray of the cervical spine was normal.

**b. Time line**-The patient initially took an analgesic for left arm pain. When the pain was not subsidized then, he consulted one allopathic doctor who suggested the CBC, LFT, Lipid profile, renal function test, and x-ray of the cervical spine. The patient found

abnormal hepatorenal function's report and came for an Ayurveda consultation. The patient was taken *deepan* and *pachana* treatment for three days, followed by *Abhyanga* and *Swedana* for five days. *Matra vasti* was administrated for three days, followed by three days of *Samsarjana karma* (special diet therapy). The timeline of the treatment schedule is explained in Table no-1.

**c. Diagnostic Assessment**-The patient was initially diagnosed as *Viswachi* (cervical spondylitis). Still, when an X-ray of the cervical spine was found normal, and the pain was unilateral, then the diagnosis was confirmed as *Mamsa gata Vata* (Myofascial pain). The patient used NSAID (Non-steroidal anti-Inflammatory drug) over the counter for Myofascial pain for a long time which might be due to accumulated hepatotoxic intermediate, NAPQI resulting in hepatorenal dysfunction.

**d. Therapeutic Intervention**- The *panchakarma* intervention was planned for this patient to reduce myofascial pain and purify the body and regulate hepatorenal dysfunction. *Panchakarma* is a complex multi-disciplinary approach stated from *Deepana*, *Pachana* followed by *Abhyanga* *Swedana*. The *matra vasti* (medicated enema ) was planned for this case, followed by *Samsarjana karma*( special diet therapy). *Sanjivani Vati* 250 mg thrice daily before food was administrated, which is thought to be increase the digestive fire and helps the body to just get rid of all the mid-way metabolites from the system<sup>16</sup>. *Citrakadi Vati* 250 mg thrice daily before food was a remedy used for treating a host of ailments like indigestion, loss of appetite, constipation, anorexia, diarrhea, abdominal heaviness, and distension<sup>17</sup>. The *Purvakarma*

comprising of *Abhyanga* and *Swedana* was administrated for five days which aggravate the lymphatic drainage one of the main pathway for removal of toxins from the body<sup>18</sup>. *Vasti* was selected for the present case as it is shown best for the *vatavyadhies*. Here *Matra Vasti* was administrated for three days was given with *Dhawantaram taila* in the dose of 60 ml per day which has *vatashamaka* and *rasayana* properties<sup>19</sup>.

**e. Follow-up and Outcome-** The patient was followed up after one month of treatment. The outcome was measured before treatment, after panchakarma treatment, and after the completion of one month of treatment. The outcome was measured in change in the Fibromyalgia Impact Questionnaire (FIQ) score, HAD (Hospital Anxiety and depression score), and pain score. FIQ was measured from baseline to the end of the panchakarma intervention. The FIQ is a validated, multidimensional

measure to assess the severity of FMS as rated by patients. The total score ranges from 0 to 100, with higher scores indicating more severe symptoms. Global pain status was assessed additionally by asking the patients for the global severity of the disease-related pain by means of a self-rating 10-point Numeric Rating Scale (NRS) with a value of 10 indicating maximum pain and 0 indicating no pain<sup>19</sup>. HAD (Hospital Anxiety and depression score) is a validated standard measure for anxiety and depression, which uses a 14-item scale with seven of the items being related to anxiety and seven items being related to depression<sup>21-22</sup>. There was a significant change in the total score before and after panchakarma therapy of Fibromyalgia Impact Questionnaire (FIQ) score, HAD (Hospital Anxiety and depression score), and pain score. The abnormal liver enzymes and renal function test were normalized after panchakarma treatment (Table no-2).

**Table-1: Timeline of the course of the disease, interventions, and outcomes.**

Date	Symptom and evaluation	Treatment
25/7/2021	Severe left arm pain and restricted movement	Taken analgesic and consult a doctor
30/7/2021	No change in pain. Blood test reports of abnormal hepato renal function	Taken liver tonic and Ultracet
9/8/2021	Pain remained unchanged	Decided to consult an Ayurveda physician
11/8/2021(D0)	Pain persists, Flatulence and Dyspepsia, with gastritis and indigestion, disturbed sleep	Came for my consultation and plan for panchakarma therapy Deepan and Pachana advised for 3 days
14/7//2021(D3)	Do-	Snehana and swedana for five days citrakadi vati- 1 tab thrice daily before food & sanjeevani Vati -1 tab thrice daily before food
19/8/2021(D8)	Gastritis and indigestion reduced, normal sleep	Matra Basti with Dhawantaram taila-60ml for 3 days

21/8/21 (D11)	Pain reduced, regular bowel movement and advised for a blood test	Samsarjana karma for three days
24/8/21(D14)	Pain Normal hepato renal function report	Stop all medication
24/9/2021	Normal hepato-renal function report	Normal diet and lifestyle

**Table-2. Biochemical, haematological and serological parameters during the treatment and observed period.**

Lab parameters	Before treatment	After treatment	After one month of follow up
Weight ( Kg)	65	64	65
BMI	22.2	21.8	22.2
FBS(mg/dl)	79	83	84
PPBS(mg/dl)	102	105	110
HbA1C	5.8	---	5.6
Total cholesterol	206	177	170
Triglyceride	227	106	100
HDL Cholesterol	44	49.6	50.6
Haemoglobin(gm/dl)	15.0	14.6	14.8
ESR 1 <sup>st</sup> hour	07	07	06
Platelet Count (10 <sup>9</sup> /L)	162	119	119
TLC	9100	5300	5300
Prothombin Time Sec	12.4	10.00	7.6
Sr.Bilirubin(Total)mg/dl	0.8	0.96	0.8
Sr.Bilirubin(Direct) mg/dl	0.3	0.1	0.1
SGOT/ ALT (IU/L)	155	19.6	20
SGPT/AST( IU/L)	74	24.4	34
Alkaline Phosphatase(IU/L)	182	150.3	110
GGT( U/L)	54	20	20
Total protein	7.0	5.84	6.2
Albumin g/dl	3.9	3.6	4.2
Urea	50	18.4	20
Creatinine	1.8	0.8	
Sodium nmol/L	142	136	130
Ultrasound	Normal	-----	-----
FIQ Score	62	18	10
Pain Score	5	1	0
HAD score	11	05	04

TLC: Total Leukocyte Count. ; SGOT(ALT): serum glutamic-oxaloacetic transaminase ;SGPT(ALT): serum glutamic-oxaloacetic transaminase.; GGT: Gamma-glutamyl transferase, FIQ: Fibromyalgia Impact Questionnaire, HAD -hospital anxiety and depression score



**DISCUSSION:**

This is a case of *mamsa gata vata* (myo facial pain or fibromyalgia) with elevated liver enzymes, urea, and creatinine. Smoking, Alcohol and stress may create hepatotoxic intermediate and worsen the fibromyalgia symptoms<sup>24</sup>. The patient has a history of cigarette smoking, alcohol use, and stress. cigarettes smoke contains more than 4000 harmful chemicals like tar, polynuclear hydrocarbons, phenol, cresol, catechol and trace elements (carcinogens), nicotine (ganglion stimulator and depressor), indole, 4-aminobiphenyl carbon monoxide (impairs oxygen transport and utilization), hydrocyanic acid, acetaldehyde, acrolein, ammonia, formaldehyde and oxides of nitrogen (endotoxin and irritant) nitrosamines, hydrazine and vinyl chloride (carcinogens), Indone carbazole (tumor accelerator) and many more. Smokers yield toxins that induce necro inflammation, increase fibrosis, and increase the risk of hepatitis B and C infections and hepatocellular carcinoma. Smoking induces oxidation stress and produces pre-inflammatory cytokines<sup>25</sup>. The consumption of alcohol (more than 14 gm of pure alcohol per day) produces which range of liver diseases beginning from steatosis, hepatitis, fibrosis, and cirrhosis<sup>26</sup>. Reactive Oxygen Species (ROS) of Alcohol metabolism cause significant organ damage, including the kidney. Fatty acid ethyl ester produces in alcohol metabolic also damages kidney<sup>27</sup>. Experimental studies and clinical observations are evidence that stress showed stress could damage hepatic and renal parenchyma by reduction of hepatic and renal blood flow, overproduction of stress hormone (glucocorticoids), an increase of gut permeabilities, the influx of gut-derived lipo-poly saccharides, and norepinephrine and production of inflammatory cytokines<sup>28</sup>. The patient's hepato-renal functions are regulated

because Panchakarma decreases for suppresses the production of free radicals, balances cholesterol synthesis and promotes lipid homeostasis, regulates blood pressure, and stimulates intrinsic antioxidant responses into the body. Boosts the body's immunity levels and Slow down the aging process<sup>29-31</sup>. The lipid peroxidase and dismutase were not measured before and after treatment in this case but detoxified the body by regulating the hepato-renal dysfunction. The secondary outcome of suppression of pain of *Mamsa gata Vata* (Myo-facial Pain) is due to oleation therapy against the *guna* of *Vata*.

**CONCLUSION:**

Panchakarma therapy can treat fibromyalgia with better outcomes in terms of pain and quality of life. It can detoxify the body by regulating the hepato renal dysfunction. More clinical pieces of evidence for panchakarma regulating the anti-oxidant enzymes and lipid homeostasis are recommended.

**Patient perspective:**

The patient voluntarily shared the laboratory reports and explained his perspective of bad habits, fibromyalgia, and dysregulation of liver enzymes and renal functions during and after Ayurvedic treatment. The patient cooperated with the Panchakarma intervention and diet schedule.

**Patient consent:**

Written informed consent for the publication of his clinical details was obtained from the patient.

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