Indexed Systemic Features of Shukra-Kshaya (Fatigue) in Aam-Vata - A Preliminary Study

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Introduction

The clinical features of Shukrakshaya can be divided into 2 categories – Systemic and Genital (C.Su.17/69).The systemic features are as follows:
1. *Daurbalya* – Weakness*
2. *Mukh Shosha* – Dry mouth
3. *Pandutwa* – Anaemia
4. *Sadan* – Exhaustion*
5. *Shrama* – Fatigue*

(*Features of Oja-kshaya too)
The genital features of Shukra-Kshaya include Klaibya and Shukr-avisarga. The features of Aartava-Kshaya (S.Su. 15/12) are Yathochit-Kala-Adarshanam, Kala-Alpata and Yoni-Vedana.

Aam-vata is described in a separate chapter in Madhav-Nidan. This chapter is written after a chapter on Urustambh which denotes pain, weakness and stiffness of lower extremities. Madhu-Kosha ascribes this sequence to Sam-Vayu as a common factor in both these diseases. The most important features of Aam-Vata are pain, stiffness (Gatra-stabdhata) and swelling of joints of upper and lower (hip, knee and ankle) extremities, head and spine (Trik). Other features described as Upadrava include the following - gastrointestinal symptoms (agnimandya, anorexia, nausea, vomiting, fullness of abdomen, pain), heaviness of body, lack of vigor, sleep disturbances, fainting, vertigo, etc.

Inflammatory Arthritis (those associated with synovitis) can be due to various causes such as rheumatoid arthritis, juvenile idiopathic arthritis, reactive arthritis, psoriatic arthritis, arthritis associated with IBD, ankylosing spondylitis, infectious arthritis and inflammatory connective tissue diseases (Systemic lupus erythematosus, vasculitis, polymyositis, systemic sclerosis, mixed connective tissue diseases polymyalgia rheumatica, etc)

Rheumatoid arthritis (RA), a prototype of Aam-Vata, is diagnosed by criteria laid down by American College of Rheumatology (ACR). 4 out of following 7 criteria must be present for at least 6 weeks to make a diagnosis of RA. ACR criteria are 91.2% sensitive and 89.3% specific for diagnosis of RA.

 These criteria are as follows:
1. Morning stiffness (more than 1hour)
2. Involvement of 3 or more joints
3. PIP/MCP/Wrist arthritis (MTP frequent)
4. Symmetric arthritis
5. Subcutaneous nodules
6. Rheumatoid Factor (RF) positivity (85% cases)
7. Erosions/Periarticular osteopenia

Rheumatoid factor estimates auto antibodies directed against abnormal Immunoglobulin-G. 3% population is RF positive with increasing incidence as age advances. Patients with higher titer have higher risk of extra-articular features. Many other diseases can give rise to positive RF tires.

These include:
1. Chronic hepatic/pulmonary/renal diseases
2. Other inflammatory rheumatic conditions including vasculitis and sarcoidosis
3. Neoplasia, radiation, chemotherapy
4. Infections
5. Diabetes mellitus

Inflammatory arthritis (Aam-Vata) can thus be differentiated from non-inflammatory arthritis as depicted in Table No 1. Early diagnosis and effective treatment of RA are essential for rapid control of disease activity and avoidance of deformities as well as other systemic complications.

TABLE 1. Differential diagnosis of arthritis

Feature	Inflammatory Arthritis (Aam-vata)	Non-inflammatory arthritis (Sandhi-vata)
Morning stiffness	+	0 (gelling only)
Flares	+	0
Improvement on joint use	+	0 (worsening)
Worsening at night	+	0
Constitutional features	+	0
Acute phase reactants (ESR, CRP)	+	0

Materials and Methods

40 female and 2 male patients of RA were selected for the study. All patients were diagnosed by a rheumatologist and fulfilled diagnostic criteria of ACR. 19 females were postmenopausal. All patients were asked to rate their following features of systemic Shukra-Kshaya on VAS-NRS scale (i.e. 0 = no symptom, 10 = very severe symptom)

1. Daurbalya
2. Mukha-shosha
3. Sadanam
4. Shrama
5. Pandutwa was assessed by estimation of haemoglobin (gm/dl). Haemoglobin level of 12 gm/dl was indexed as 0 followed by 1 point rise for each gm/dl so that 2 gm/dl was indexed as 10.

A sum of all 5 indices was divided by 5 to derive Index of Systemic Shukra-Kshaya

All patients were treated with standard modern therapy consisting of
1. Methotrexate (variable dose) + Folate
2. Hydroxychloroquin 200-400 mg
3. Nonsteroidal anti-inflammatory drugs (During initial period)
4. Low dose glucocorticoids during initial 3-6 months
5. Calcium
6. Proton pump inhibitor
7. Bisphosphonates for osteoporosis in selected cases

Patients were classified according to months of treatment received. The index of systemic Shukra-kshaya was compared amongst these groups. 4 patients assessed at their first visit were included in patients receiving treatment for 0-3 months.

Observations

There were 12, 6, 11 and 13 patients who received treatment for 0-3 months (average 1.29 months), 3-6 months (4.42 months), 6-12 months (9.32 months) and more than 12 months (25.92 months).
It was observed that the index of systemic Shukrakshya dropped consistently with increasing duration of treatment (Table 2). It was seen that the index diminished by 42% after 1 year of treatment. 4 first visit patients had initial index of 5.15. This can be expected to go down by 48% after One year of treatment.

TABLE2. Index of systemic Shukrakshaya in different groups

Group	Months of Treatment	No of Patients	Average Months of Treatment	Weak ness/ Dourbalya	Since/ Dryness	Exhaustio n Sadana	Fatigue /Shrama	Anaemia - Pandu	Index of Shukra Kshay
1	0-3	12	1.29*	5.75	4.5	5.58	5.08	2.27	4.63
2	3-6	06	4.42	3.5	4.0	3.17	4.0	1.66	3.27
3	6-12	11	9.32	3.64	2.36	3.36	4.73	1.36	3.09
4	>12	13	25.92	3.0	2.85	2.31	3.46	1.77	2.68

Individual symptoms of systemic Shukrakshaya responded to different extents (Table 3). Whereas sadanam responded by 59%, pandutwa responded by 22% only.

TABLE3. Changes in individual components of the Index

Months of Treatment	0-3 months	>12 months	% reduction in Index
1. Dourbalya	5.75	3.00	48%
2. Mukh-Shosha	4.50	2.85	37%
3. Sadanam	5.58	2.31	59%
4. Shrama	5.08	3.46	32%
5. Pandutwa	2.27	1.77	22%
INDEX	4.63	2.68	42%

Discussion

Three features of systemic Shukrakshaya viz. dourbalya, sadan and shrama are constituents of fatigue. Fatigue is a disabling symptom – 88-100% patients of RA report fatigue. Fatigue is an important symptom in various inflammatory rheumatic diseases. It indicates active disease whereas absence of fatigue indicates remission. Measurement of fatigue is essential in all patients with RA as it provides information on outcome of treatment (1). Fatigue level did not reach 0 in the present study. A survey in India indicates that 12.1% of 2494 women complain fatigue (2). There are various other causes of fatigue such as old age, socioeconomic deprivation, lower levels of education, gender disadvantage, poor mental health, anaemia, hypothyroidism and Vitamin D deficiency. Fatigue must be assessed in all cases of RA and other rheumatic diseases. This can be accomplished by use of FACIT (Functional Assessment of Chronic Illness Therapy) Fatigue Scale (www.facit.org). The scale consists of 13 questions answered as 0-Not at all 1-A little Bit; 2-Somewhat; 3-Quite a bit and 4-Very much. The initial 4 questions of this scale relate to fatigue (Klama), weakness all over (Dourbalya), listlessness (feeling "washed out") (Sadanam) and tiredness (Shrama). Other questions relate to trouble in starting or finishing things, requirement of daytime sleep, doing day-to-day activities, limitations of social activities and feeling of frustration.

Mukhashosha or sicca symptoms (dryness of eyes, mouth, etc) are due to immune dysfunction of exocrine glands. 20% of RA cases have secondary Sjogren's syndrome (Almost 50% in our series of late RA – unpublished observations). 75% patients of RA have **anaemia** of chronic disease (normocytic normochromic anaemia and raised ferritin). Anaemia correlates with raised ESR and disease activity and is due to ineffective erythropoiesis. Haemoglobin should return to normal after control of disease activity in RA but usually does not do so in Indian women due to nutritional factors. **Dourbalya** is defined as Mamsa-apachaya by Chakradatta (Ch Ni 1/33). Sarcopenia (loss of skeletal muscle mass with functional damage) is due to inflammatory cytokines and low physical activity (3) and can be measured by densitometry. Various causes of sarcopenia include aging, malnutrition, chronic infection and neoplasia. Weight loss may not be apparent due to stable or increased fat mass. Bone erosions and periarticular **osteopenia** are included in ACR classification criteria for diagnosis of RA. Ankylosis and deformities of joints are common in cases of chronic RA. Features of Dhatukshaya are tabulated below (Table 4)

It is observed that some of these features are also described in **Oja Kshaya** (Ch Su 17/73; Su Su 15/19-28). These are as follows:

1. Dourbalya (Kshaya – Ch)
2. Sandhi-Vishlesha (Visrans – Su)
3. Gatra-Sadan (Visrans – Su)
4. Shrama (Visrans – Su)
5. Stabdha-Guru-Gatrata (Vyapat – Su)
6. Mamsa-Kshaya (Kshaya – Su)

A recent observation that life-span shortened by 7 years due to vascular causes also correlates well with death as a feature of Bala-kshaya described by Sushruta.

TABLE 4. Dhatukshaya in RA

Rasa	Mukh-Shosha, Shrama
Rakta	Anaemia
Mamsa	Dourbalya – Sarcopenia,Sadan, Joint pains
Meda	Atherosclerosis, Dyslipidemia
Asthi	Osteopenia, Bone pains
Majja	Joint pains, Osteopenia, Vata-roga
Shukra	Fatigue

Aam is defined as Ajeerna/Apakwa Ahar-Rasa (A.H.Su. 13/25) due to Agnidourbalya. This leads to improper formation of further Dhatus (Rakta onwards). Aam is also described as a mixture of Atidushta Doshas – Kodru Visha (A.H.Su. 13/26). This concept may match with various cytokines now described in RA and other inflammatory connective tissue diseases. It seems that the features of Rasa-kshaya (Sicca symptoms 37% response) and Pandutwa (Anaemia 22% response) do not respond well as compared to further dhatus. This may be due to the fact that Rasa-dhatu is most affected in Aam-Vata. Swayoni-Vardhan therapy for Dhatukshaya may not be applicable in such situation as this can further vitiate Aam. Therapy has to be primarily Pachan in nature. Exercise, too, helps in a similar way. It is observed that Dhatu-vardhan chikitsa such as iron and calcium lead to constipation – an upadrava of Aam-vata. It is possible that the concept of dhatu-gatatwa may apply to features of dhatukskaya in RA. Pain, discoloration, emaciation and ulcerations (Rheumatoid vasculitis) are features of Rakta-gata Vata. Pain and fatigue (Shrama) are features of Mamsa- and Medo-gata Vata. Joint pains, sarcopenia and weakness are features of Majja- and Asthi-gata Vata. (Ch. Chi. 28/31-33) Joint pain is a feature of Majja-pradoshaj diseases too.

More work needed in this field with more number of cases, age-matched controls and follow up of a cohort. Role of gender and menopause needs to be defined. Similar studies can also be carried out in other forms of inflammatory arthritis. As the method of study is very simple, it may as well be applied to study of efficacy of therapy in these cases.

Conclusion

Rheumatoid arthritis and other inflammatory rheumatic diseases are common and affect about 1% of our population. Features of dhatukshaya are seen in RA and improve with proper treatment. This aspect of disease must be considered in all cases of inflammatory arthritis and therapy planned accordingly. Shukra-kshaya, being end-result of kshaya of various dhatus, can be easily measured by FACIT fatigue scale and should be used in all cases of inflammatory arthritis to identify severity of disease and monitor efficacy of treatment.

References

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