Management of juvenile spondyloarthropathy through Ayurveda: - a case report

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A R T I C L E   I N F O

Article history:
Received 5 December 2018
Received in revised form 8 February 2020
Accepted 11 June 2020
Available online 5 August 2020

Keywords:
Ayurveda
Spondyloarthropathy
Aamavata
Arthritis
Panchkarma
HLA-B27

A B S T R A C T

Juvenile Spondyloarthropathies are the inflammatory arthritis before the age of 16 years and are characterized by the involvement of both synovium and enthesis leading to spinal and oligoarticular peripheral arthritis, principally in genetically predisposed (HLA-B27) individuals. These arthropathies are having poorer chance of remission with conventional treatment in comparison to other juvenile arthritis; with less than 20% going into remission within five years of diagnosis. This paper is a retrospective observational study of this condition in one patient receiving Ayurvedic treatment in Paediatric Unit of Ch. Brahm Prakash Ayurved Charak Sansthan. A 15 years adolescent boy with the complaints of inability to stand and walk due to pain and swelling in large joints of body; was carried to Balroga OPD by parents. On the basis of history, physical examination and investigations, the condition is diagnosed Aamavata as per ayurvedic approach and juvenile spondyloarthropathy as per modern medical science. This case is managed on the principle of treatment of Aamavata with administration of Ajamodadi churnam and Mishreyar ark as deepana-pachana drugs followed by administration of Simhmad Guggulu and Lakshadi Guggulu with Maharasadi kashayum and Dashmoolarista for 3 months. Rheumayoga gold was also given from 4th week onward for 3 months. Panchkarma in the form of Baluka swedana and Kshara basti was also administered for 2 weeks after one month of oral medication. This treatment results in complete remission of all the signs and symptoms including pain and swelling of joints. The case is followed up for next three years without any relapse or progression in the disease. The case study infers that early intervention of Ayurvedic treatment in juvenile spondyloarthropathies may result in complete remission as well as may prevent progression of the disease. The case study provides a good hope for the management of this ailment as well as new ray for research.

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1. Background

Juvenile Spondyloarthropathies (JSpA) are the inflammatory arthritic diseases that exhibit overlapping clinical features and shared genetic predisposition which occur before the age of 16 years. They are characterized by the involvement of both synovium and enthesis leading to spinal and oligoarticular peripheral arthritis, principally in genetically predisposed (HLA-B27) individuals. The principal clinical entities are enthesitis related arthritis, undifferentiated spondyloarthritis, ankylosing spondylitis, reactive arthritis, psoriatic arthritis and enteropathic arthritis [1]. In comparison with other forms of juvenile arthritis, JSpA is likely to have a poorer outcome [2]. Observational studies suggest that continuous disease activity for more than five years forecasts disability and that disease remission occurs in less than 20% of children within five years of diagnosis [3]. Ayurveda describe a joint disorder namely Aamvata which have symptoms almost similar to those of spondyloarthropathies.

2. Case history

A 15 years adolescent boy was carried to Balroga OPD by parents with the complaints of inability to stand and walk due to sandhi vedana & sandhi shotha (pain and swelling in large joints of body) for last one month. The patient was taking anti-inflammatory & analgesic drugs (ibuprofen 400 mg tds & serratiopetidase 10 mg tds) for the complaints for last one month with minimal relief.
On enquiry the patient told that onset was acute with overnight pain and swelling of left ankle joint, which is followed by swelling and pain in left knee joint in few days. Then the pain and swelling gradually involve right knee joint as well. Before the onset of symptoms he had suffered a minor trauma to ankle and an episode of loose stools one week back which may be considered as factor for derangement of agni & aggravation of Vata.

During the course of the disease all these joints remained painful and swollen. He also suffered an episode of severe abdominal pain and loose stool around beginning of the 4th week of illness for which he was admitted to emergency department of an allopathic hospital. At the end of four weeks illness he suffered bleeding per rectum for which he again went to allopathic hospital, got evaluated but doesn’t continue allopathic treatment and came to our OPD.

On enquiry patient told that pain is continuous, aching in nature, aggravated in night and by cold foods & movement of joints, mild relief with pain killers and associated with swelling and stiffness in joints, restricted movements, loss of appetite and fever. There was no history of any kind of skin eruptions, pain or redness in eyes, pain or stiffness of small joints of hands or feet, cervical pain, painful micturition, chest pain, involuntary movements of limbs etc.

2.1. Past history

History of typhoid 4 years back, fracture around right elbow 5 years back, no other relevant past history.

Patient’s diet and nutritional history doesn’t reveal any kind of stressor, he was on vegetarian diet with occasional intake of junk food. No history of tea, tobacco, alcohol or other addictions.

2.1.1. Drug history

Patient has taken anti-inflammatory & analgesic drugs (ibuprofen 400 mg tds & serratiopetidase 10 mg tds) for last one month for present complaints.

2.1.2. Family history

Father had suffered some joint problem at the age of 19 years. No other relevant history of any illness found in other family members.

2.1.3. Genetic history

Patient was found to be HLA-B27 positive.

2.1.4. Socio-economic history

Patient belongs to lower middle class, living in sub urban area of Delhi. The periphery is not clean with large dirty drain nearby to the colony of the patient. Source of water is piped water supply.

2.2. Examinations

Patients is carried to the OPD with poor general condition, weight 42 kg, height 170.6 cm, pulse rate 106/min regular, febrile (101°F), BP-110/60 mm of Hg, marked pallor, dry coated tongue, no icterus, no gross lymphadenopathy, no clubbing or cyanosis, no skin lesions.

2.2.1. Dashvidha pariksha

The patient is of Vataj prakruti, Asthisara, madhayama sahana, sama pramana, madhyama satva, mandagni, avara vyayam shakti, sarvanga santapa, signs of Aam like lipta jivha, daurblaya, anna-anabhilasha, klesha were present.

2.2.2. Chest

Normal in shape & appearance with symmetrical bilateral expansion, normal lung field resonance and equal bilateral air entry without any added sounds.

2.2.3. CVS

Apex beat in left 5th intercostal space medial to midcalvicular line, S1S2- WNL, no murmurs.

2.2.4. Abdomen

Scaphoid abdomen, soft non tender without any organ palpable.

2.2.5. CNS

Conscious, oriented to time, person & place, Cranial nerves-intact.

2.3. Local examination

2.3.1. Darshana pariksha (Inspection)

Sotha & Raga of sandhis (large swollen and red left ankle, left knee, right knee bilateral knee effusion (Fig. 1) and bilateral hip joints) with Mansha shosha (severe muscle atrophy of thigh, pelvic girdle muscles).

2.3.2. Sparshana pariksha (Palpation)

All the affected sandhis (joints) were having Santapa & are Sparsha Asaha (warm and tender) with Stambha (minimal active as well as passive movements).

2.4. Ashthavidha pariksha

The Ashthavidha pariksha points to the Aam production in the body (Supplementary Table 1).

2.5. Investigations

Initial investigations (last week of June 2016); CRP+-ve, Mon-toux Test-negative, RA factor-negative, ASO titre-negative; Arthrocentesis reports shows TLC- 1750 cells/mm3 with 98% polymorphs & 2% lymphocytes, sugar-10 mg/dL, proteins- 4.4 gm/dL; CBC shows Hb-10 gm%, TLC-8600/ul, DLC-P-60%, L-32%, E–6%, M-2%. ESR- 59 mm fall in 1 h and Repeat CBC after 20 days shows ESR -120 mm fall in 1 h.

At the time of ayurvedic consultation (1st week of August 2016); CRP- +ve and ESR- 128 mm fall in 1 h.

Fig. 1. Bilateral knee effusion before treatment.
3.1. Diet

Light bland diet was prescribed throughout the treatment and was indicated during follow up period also. The diet advised includes boiled old rice, breads made up of old wheat flour, soup of pulses like Masaora (lentils), Kulath (horse gram), Mudga (green gram) and Arhara (pigeon pea), vegetables like Parwla (pointed gourd), Vastuka, brinaja, Kervellaka (bitter gourd), bottle gourd etc. The foods asked to avoid were heavy, oily, improperly cooked foods, junk food, milk items like curd etc.

3.2. Follow-up and outcome

Initially patient was followed up weekly. At follow ups patient was assessed for effect of therapy, reduction in disease activity, and improvement in daily activity function score as well as appearance of any untoward effect and tolerance of medications. Treatment adherence was assessed by asking patient as well as parents of the patient. The patient show good results with ayurvedic treatment and the outcome is discussed in the Supplementary Tables 2 and 3 in terms of patient assessed outcome and clinician assessed outcome.

4. Discussion

The condition was approached and managed with the principles of management of Aamvata. In Aamvata, two main events are contributing to the pathogenesis of the disease. They are production of Aam and also the Vata vitiation. According to Ayurveda, the treatment of Aamvata includes treating Aam with Langhana,

Fig. 2. Complete remission after treatment.
In this case the first line of drugs include deepana and pachana with Ajmodadi churna [5] and Mishreya Ark, wood and use of Vata anulomana drugs like Dashmoolaristam [6] and Maharasnadi kshayam [7] and also vata shaman and santhi shothahara drugs like Simhnd Guggulu [8]. As there was good initial response in reduction of pain the same treatment plan was advised for next two weeks with addition of Shankhvatari for increasing aghi and snehana with oil to reduce Vata. But as the swelling persist even after treatment for 3 weeks, addition of a Gold preparation as rasayana and vata pacifying agent Rheumayoga Gold was prescribed for one week but after having incomplete remission patient was admitted and kshara basti [9] administered to extract out remaining Aam and sthanika swedana done with Patali initially followed by Baluka swedana for 2 weeks. The use of Potali swedana worsening the pain and relief with Baluka swedana indicate role of Aam in this condition [10]. With these panchakarma procedures internal shamanas drugs were used. This completes the treatment regimen of disease and the patient was completely relieved of pain and swelling of joints. As per recent reasearches on these formulations, Ajmodadi churna shows significant anti-inflammatary action in rats [11]. Simhnd guggulu has been found effective in the management of Aamvata in various clinical studies in adults [12]. Lakshadi guggulu is also proven for its antiarthritic and chondroprotective activity in in vitro study [14]. Various in vitro and experimental studies have shown that Maharasnadi kshayam possesses anti-inflammatary, analgesic [15,17] & antioxidant activities [16] through which it produces its anti-arthritic effects. Dashmoolaristam also possesses analgesic and anti-inflammatary activities [18]. The worth of ksharabasti in Aamvata has been proven in various clinical studies [19,20]. Thus this treatment protocol for JSpA with the use of these formulations and panchakarma procedure is having scientific justification as well.

Drugs were chosen according to prakriti (constitution), satva (mental strength), satmaya (dietary pattern) & vaya (age) of patient and also according to desha (regional variation), kala (seasonal variation), roga avastha (disease severity). For prevention of the condition some rasayana, deepana, pachana & Vata shaman drugs were continued for next 3 months.

At present, the patient is under continuous observation through quarterly follow-ups. The patient is still under clinical remission as of February 2020. This is a significant finding considering the prognosis and unsatisfactory treatment in modern medicine.

This case study infers that early intervention of ayurvedic treatment protocols particularly panchakarma procedures in JSpA are beneficial in inducing remission. Prolonged treatment with ayurvedic medication and following ayurvedic pattern of diet as well as lifestyle can keep patients of JSpA in remission. However as this was a single case study the results and outcomes may vary upon enrolment of large number of patients of JSpA.

In this study the interventions are prescribed considering the kshetram, agnikala, vatya and ashithya drugs [6] and also the anatomical region involved and seasonal variation, disease severity. The drugs were prescribed according to the signs and symptoms of the patients after panchakarma procedures and internal shamanas were taken. The drugs were chosen according to prakriti, satva, desha and satmaya and also according to vaya and age as per Ayurvedic pattern by the patra potali swedana replaced by Baluka swedana, Dashmoola kwatham and Balaristam may be followed by Baluka swedana with local application of laghuvishgarbha tail with strict dietary instructions.

In vitro drug research gives insight into the mechanism of action of ayurvedic drugs and this research has been done with the following drugs: Aamvata, Vata, pachana, Vata anulomana and kshara basti.

### Table 1

| Time line of the case. | Clinical events and interventions |
|------------------------|----------------------------------|
| Last week June 2016    | Onset of joint pain and swelling in Left ankle and left knee joint |
|                        | Investigation shows RA factor & ASLO – negative, CRP- positive, Synovial fluid- TLC- > 1750 cells/mm³ with 98% polymorphs |
|                        | Start allopathic medicine (ibuprofen 400 mg tds & serratiopeptidase 10 mg tds) |
| 1st week July 2016     | Involvement of right knee and both the hip joints |
| 3rd week July 2016     | Episode of severe abdominal pain and loose stool, got indoor treatment at allopathic hospital for 3 days |
| 4th week July 2016     | Episode of bleeding per rectum |
| 2nd August 2016        | First visit to our OPD, ESR-128 mm/h, CRP- positive, BASDAI-8.1 |
| 9th August 2016        | Diagnosis of Aamvata (sero-negative polyarthritis) made and started orally Ajmodadi churnam, Mishreya Ark, Lakshadi Guggulu, Simhnd Guggulu with Maharasnadi kashayam and Dashmoolaristam with strict dietary instructions |
| 16th August 2016       | Mild improvement, BASDAI-7.1 |
| 23rd August 2016       | Improvement in pain and joint movement but less improvement in joint swelling, ESR-94 mm/h, CRP- positive, BASDAI-5.1 |
| 30th August 2016       | Tab Rheumayog Gold added to previous drug regimen and Maharasnadi vati stopped |
| 4th September 2016     | Improvement in pain and joint movement but less improvement in joint swelling, ESR-94 mm/h, CRP- positive, BASDAI-5.1 |
| 13th September 2016    | Relieved of pain and swelling, BASDAI-1.2, ESR- 42 mm/h, CRP-negative, HLA- B27- positive |
| 10th January 2017      | Oral medication continued for next 3 months |
| February 2020          | Patient still in remission with occasional heel pain |

### Table 2

| Duration of treatment | Drugs used | Dosage | Rationale of drug use | Results |
|-----------------------|------------|--------|-----------------------|---------|
| 1st week              | Ajmodadi Churna | 3 g BD | Deepana, Pachana | Reduction in Aam signs |
|                       | Mishreya Ark  | 15 ml BD | Deepana, Pachana, Vatanuloman | Reduction in pain |
| 2nd -3rd wk           | Simhnd & Lakshadi Guggulu | 500 mg BD | Shothahar, Vatagha | Reduction in pain |
| 4th week              | Maharasnadi Kashyaa | 40 ml BD | Shothahar, Vatagha | Reduction in pain |
|                      | Dashmoolaristam | 20 ml BD | Shothahar, Vatagha | Reduction in pain |
| 5–6th week            | Same as 1st week + Shankh Vati | 250 mg BD | Deepana, pachana, Vatanuloman | Complete relief in pain & mild reduction in swelling |
| 4th week              | Same as 1st week + Rheumayoga gold | 1tab bd | Vatagha, Rasayana | Reduction in swelling & improvement in weakness |
|                      | Oral medicine + Baluka Swedana & Kshara Basti | 300 ml/day | Aamhar, Rukshana, Vatagha | Complete remission of the disease |
5. Conclusion

This case study concludes that early use of ayurvedic formulations and panchkarma procedures are helpful in reducing pain and swelling in the patients of spondyloarthropathy. Ayurvedic management can induce early remission of the disease and can prevent further relapses. However clinical trials with large number of patients are required to further validate the results.

5.1. Patient perspective of treatment

Patient as well as parents was totally satisfied with the treatment. As initially they have taken the patient in wheel chair and after treatment of 6 weeks patient was fully fit to walk or do any routine activity.

5.2. Patient consent

Written consent of patient had been taken for publication of this case study.

Source(s) of funding

None.

Conflict of interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jaim.2020.06.008.

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