

A SCOPING REVIEW ON THE ROLE OF MODERN INVESTIGATIONS IN CURRENT AYURVEDIC CLINICAL PRACTICE

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Abstract

Background: Ayurveda, a time-tested branch of medicine, is gaining global recognition. However, the integration of modern diagnostic tools into Ayurvedic clinical practice has become essential in the current AI-driven healthcare system. Modern investigations provide objective validation for Ayurvedic principles and facilitate the incorporation of Ayurveda into mainstream health systems.

Objectives: To evaluate the role and relevance of modern diagnostic investigations in current Ayurvedic medical practice, highlighting their benefits, limitations, and the importance of maintaining classical Ayurvedic diagnostic frameworks.

Methods: A scoping review of 43 published articles from 3 databases over the last 10 years was conducted to assess how modern investigations are utilized in Ayurvedic clinical settings. The articles were analyzed for the types of investigations used, their purpose, such as diagnosis, prognosis, health assessment, treatment efficacy, and safety, and their contribution to Ayurvedic practice. A structured analysis was also performed to identify disease-wise and purpose-wise use of investigations.

Results: The majority of studies demonstrated the use of biochemical, imaging, and haematological investigations alongside Ayurvedic treatments. Diseases like *yoniroga* and liver disorders had the highest number of studies. Most investigations were employed for diagnosis and treatment efficacy, while few were used for safety assessments. Integration of diagnostic tools such as USG, CT, MRI, HbA1c, and LFTs enhanced clinical decision-making but often lacked alignment with Ayurvedic assessments like *Daśavidha* and *Aṣṭavidha Parīkṣa*.

Conclusion: Modern diagnostic tools, when used judiciously, serve as a valuable integration to Ayurvedic clinical practice. They aid in accurate diagnosis, monitoring treatment efficacy, and ensuring patient safety. However, overdependence on these tools may affect the holistic principles of Ayurveda. A balanced approach integrating both modern diagnostics and classical Ayurvedic assessments is essential for the evolution of Ayurveda in contemporary medicine.

Introduction

Human beings have evolved through ages and different civilisations, adopting discoveries and technologies. Just as all the fields like agriculture, industries, fashion, and communication have undergone transformation, the field of healthcare too has evolved from basic symptom-based care to the present AI-assisted diagnostics.

Initially, physicians used only symptomatology for diagnosis and treatment. Gradually, physical examinations and, in the later period, basic lab investigations like blood investigations and urine examinations were conducted when essential. With technological advancements and the development of different fields like biomedical engineering, molecular biology, genetics, biochemistry, microbiology, pathology, medical imaging and now artificial intelligence, a wide

range of modern diagnostic tools are used by physicians all over the world.

Ayurveda is an age-old, time-tested branch of medicine that focuses on both preventive and curative aspects of diseases. With all the growing fields, Ayurveda has also incorporated modern-day knowledge in education, clinical practice, research, drug development, and manufacturing. Ayurveda has been gaining popularity at the global level in the past decades. Around the globe, 25 countries legally recognize Ayurveda as a traditional medical system.¹ The WHO established the Global Traditional Medicine Centre (GTMC) at Jamnagar, Gujarat, India, in 2022.² The WHO International Classification of Diseases ICD-11 has included traditional medicine within WHO's global health classification system in February 2024.³ With this growing recognition, the Ayurveda community must keep pace with the present medical society to gain knowledge about contemporary diagnostic tools and utilize in daily clinical practice and decision-making.

Ayurveda is the knowledge of *āyus* or life. *Āyus* is the combination of the body, sense organs, mind and soul and not merely the body.⁴ Modern-day diagnostic methods will help to give quantitative and precise knowledge about the human body. In a nutshell, Ayurveda believes in accepting changes without discarding its basic principles. With time, modern investigations have become an essential part of clinical diagnosis and treatment for almost all Ayurvedic physicians. At present, an objective understanding of the current clinical practice and the use of modern diagnostic methods is needed. It is essential to understand how these tools complement the Ayurvedic medical practice without compromising its core principles.

Materials and methods

A scoping review was conducted with the objective of understanding the role of modern investigations in the current Ayurveda medical practice following PRISMA ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines and registered under OSF (Open Science Framework) registry under Scoping Review.

Inclusion criteria

Studies published within the last 10 years (2015-2025) were included. Only articles available with free full text in the English language were taken for the review. The types of articles included were Case Reports, Clinical Study, Clinical Trial, Meta-Analysis, Observational Study, Randomised Controlled Trial, Review, Scoping Review, and Systematic Review to incorporate all aspects of data related to modern investigation tools.

Exclusion criteria

Editorials, commentaries, letters to the editor, and conference abstracts were excluded. Review articles that did not mention diagnosis and treatment of diseases. Articles that solely discussed Ayurvedic treatments without the use of modern investigations were also excluded.

Information sources

A detailed search was conducted in PubMed, Google Scholar, and ScienceDirect between April and May 2025. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for scoping reviews (PRISMA- ScR) guidelines were used for this systematic review.

Search Strategy and Selection

Selection of diseases for the review-A preliminary search was conducted based on the diseases mentioned in *Caraka Samhita Cikitsa Sthana* to assess the volume of publications in each disease. The most recent report of India in the Global Burden of Disease study (2021 report)⁵ was also considered to ensure clinical relevance. Additionally, system-based selection was done to include different diagnostic methods. 15 diseases were finally selected for the review, which are as follows: diabetes mellitus, liver disease, diarrhoea, tuberculosis, *kushṭa*, *jwara*, *yonīroga*, *pāṇdu*, *vātavyadhi*, *viṣa*, *apasmāra*, *vātarakta*, *unmāda*, *visarpa* and, *raktapitta*.

Keywords used under Search strategy- "Ayurved*[Title/Abstract] AND "disease"[Title/Abstract]. The Boolean operator "AND" was used, and "OR" was also used when

both Ayurveda and modern disease names had to be given.

Selection process

The keywords helped in identifying articles in Ayurveda of different disease conditions. A total of 226 articles were identified initially by both the reviewers. 8 duplicates were excluded, and the identified articles were screened through the title and abstracts. Out of these, 92 screened records underwent full-text reading to be included in the review to check whether they discussed the investigation methods. A total of 49 records were excluded, and 43 were included in the final review. Figure 1 depicts the selection process. Among the 15 diseases initially selected, 3 diseases (diarrhoea, *unmāda*, *raktapitta*) did not have data regarding modern investigations after the full-text reading. Thus, articles related to these diseases were excluded. In the final selection, a total of 12 diseases were considered for the review.

Data extraction

Data extracted was coded in Excel sheets and includes the details about the publication metrics: first author name, publication year, journal published, investigations used, purpose of investigations used- diagnosis, prognosis, Health status assessment, treatment efficacy, whether tests were done to ensure the safety of Ayurveda drugs after the treatment. The data relating to the Ayurveda diagnosis methods were used also extracted by both the reviewers independently.

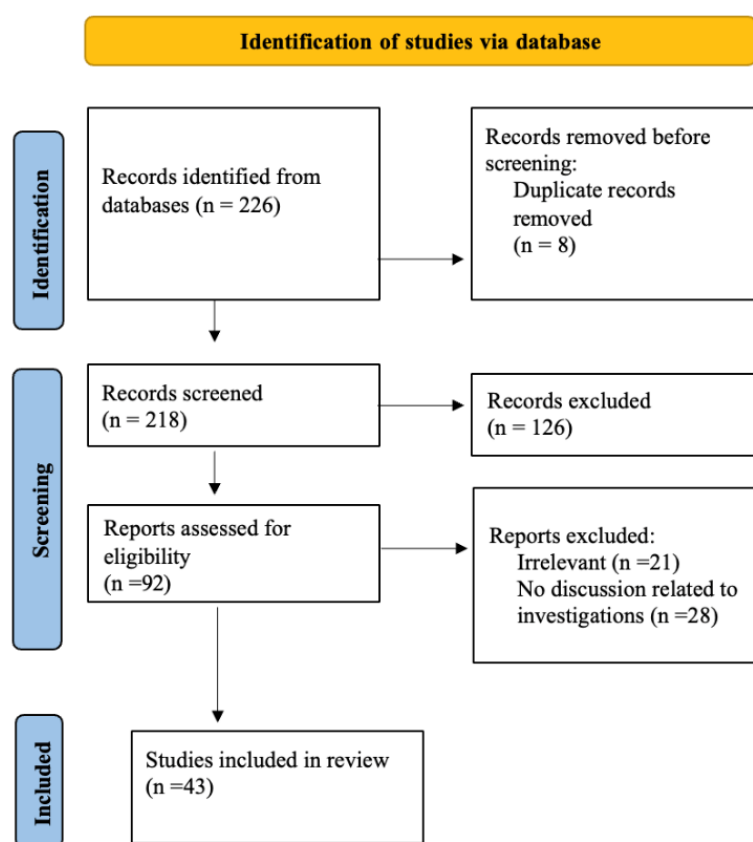


Figure 1- PRISMA ScR flow chart

Results

A total of 43 articles meeting the inclusion criteria were selected for the review. The results of the extracted data. The results of the extracted data are represented in Table 1.

Disease- Among the selected diseases *yonīroga* (included endometriosis, leucorrhea, fibroid and

PCOS) and liver disease (included fatty liver, hydatid cyst, liver abscess, Wilson's disease) had the highest, with 8 articles each. Following diabetes (case reports on diabetic management and diabetic foot ulcers) with 7 articles and *vata vyadhi* (sciatica, Motor neuron disease, Muscular dystrophy, *sirāgata vāta*, stroke, Guillain-Barré syndrome) with 6 articles. *Viṣa*, *vātarakta*, and *jwara* had 3 articles each. *Apasmāra*, *pāṇdu*, tuberculosis, and *visarpa* had the least, with 1 article each. This is represented in Figure 2.

Year- The maximum number, with 15 articles, was published in the year 2024, followed by 2022 and 2023 with 10 and six in number, respectively. In the initial year of 2015, a single article was taken into review, followed two in the year 2017 and 2021, three articles were there from 2016 and 2020. It is represented in Figure 3.

Journals- The Journal of Ayurveda and Integrative Medicine have published the largest number of reports from this review, with 26 in number followed by the Journal of Pharmacology and Bio allied Science with six in number. The articles published by each journal, according to the year, are represented in Figure 4 and Figure 5.

Investigation methods- Ultrasonography is the highest in number followed by CBC with 14 in number and LFT with 13 in number. The top 10 most used investigations are USG, CBC, LFT, FBS, PPBS, MRI, HbA1C, X-ray, CT scan and RFT. Haemoglobin, biopsy, lipid profile and ESR are used moderately, followed by ECG, endoscopy, EEG, thyroid ANA, CRP, Urine examinations, and CPK. Many other investigations are used rarely in different types of disease. It is depicted in Figure 6.

Purpose of investigations- 40 studies used investigations for diagnosis purposes, 30 for the assessment of the treatment efficacy, 18 for the general assessment of health and 15 for prognosis purposes. This is depicted in Figure 7.

Safety of Ayurvedic therapeutics- In two studies, lab investigations like RFT or LFT were conducted after the treatment to ensure the safety of Ayurvedic medications.

Ayurveda diagnostic methods- Three studies had examinations based on the *aṣṭavidha parīkṣa*, five studies had details about the *daśa-vidha parīkṣa*, and only one study mentioned *trividha parīkṣa*.

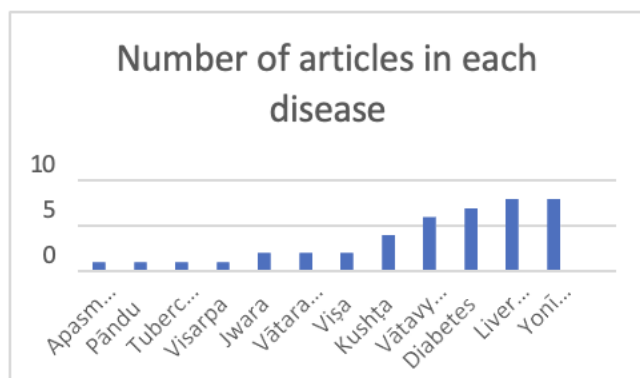


Figure 2- Number of articles in each disease.

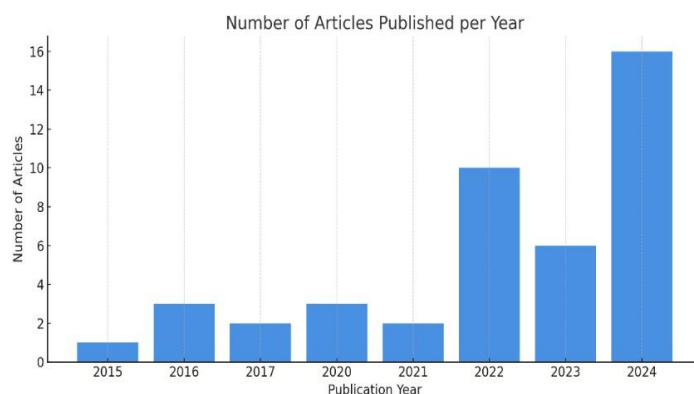


Figure 3- Number of articles published per year

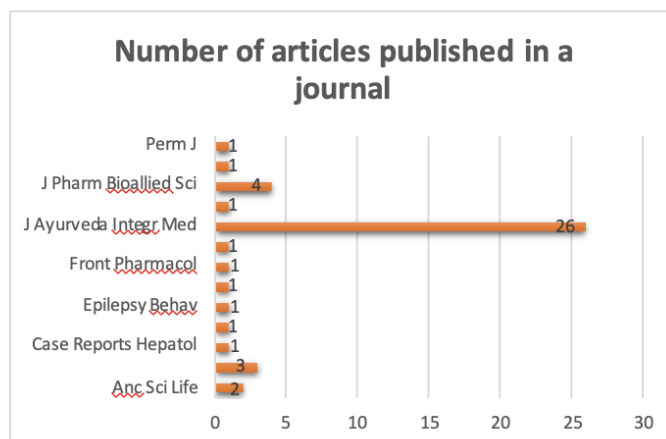


Figure 4-Number of articles published in a journal

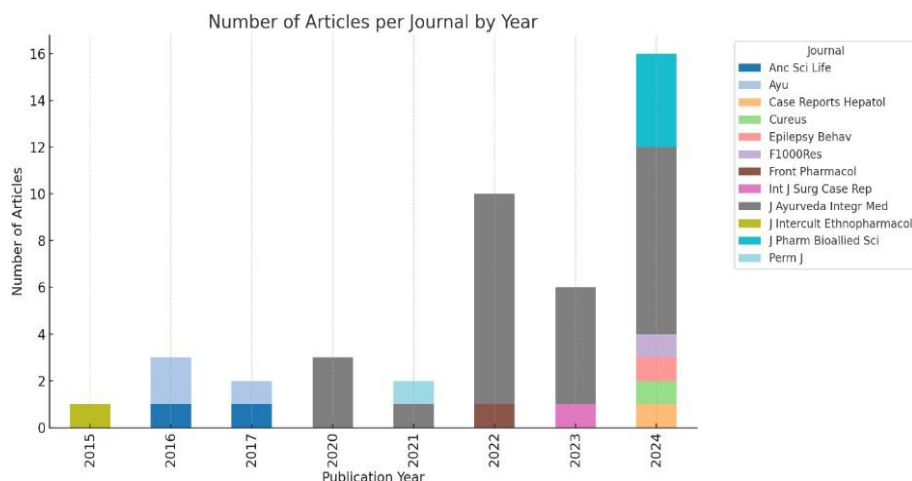


Figure 5- Number of articles per journal by year

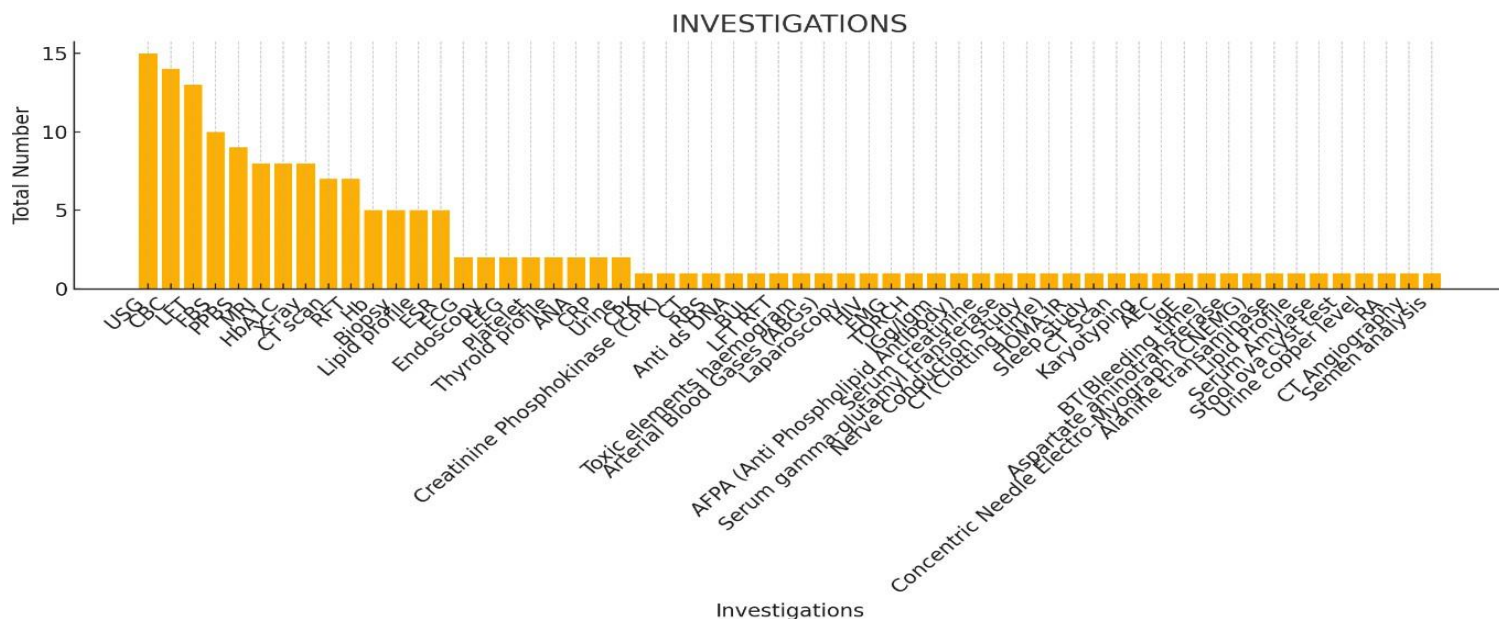


Figure 6- Total number of investigations

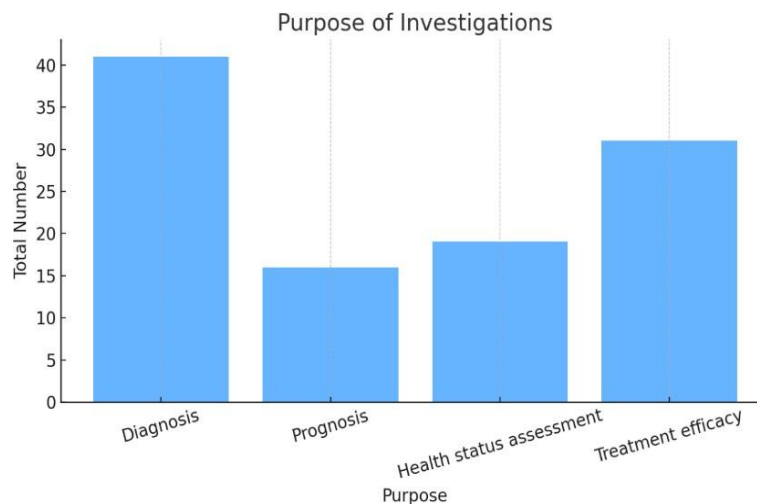


Figure 7- Purpose of investigations

Discussion

The maximum number of studies were published in the year 2024, indicating that a significant number were published in the recent year, which gives data regarding the most recent clinical practice. The reports, including the data related to the diagnostic tools, have seen a notable increasing trend. It suggests that either fewer publications documented the details of diagnostic tools or it was not widely incorporated into clinical practice as in the recent years. The Journal of Ayurveda and Integrative Medicine is a peer-reviewed PubMed-indexed journal which contributes significantly to the publications.

53 different types of investigations in haematological assessment, biochemical profiles, imaging techniques, etc are widely incorporated in the present-day Ayurveda clinical practice. The top ten used investigations are Ultrasound (USG), Complete Blood Count (CBC), Liver Function Test (LFT), Fasting Blood Sugar (FBS), Post-Prandial Blood Sugar (PPBS), Magnetic Resonance Imaging (MRI), Glycated haemoglobin (HbA1C), X-ray, Computed Tomography (CT) scan, and Renal function test (RFT). The pattern of the frequency with which it is used in different types of disease is represented through a heat map in Figure 8.

The most used tool in this review is USG, which is repeatedly used in gynaecological diseases and liver diseases. Similarly, FBS, PPBS, and HbA1C are mostly used in diabetes mellitus to track the glycemic index. In other diseases, it is rarely conducted for health assessment. CBC is usually done in more than 7 diseases in the review. It is the most repeated tool in everyday clinical practice to assess general health, prognosis and severity of a disease. LFT is done in most of the liver disease for diagnosis, prognosis, and treatment efficacy. LFT and RFT are occasionally done in diabetes for general health assessment. MRI is usually used *vātavyadhi* for diagnosis and to track treatment efficacy. X-ray is usually used in confirmatory diagnosis.

All the investigations are mostly used for the purpose of diagnosis, prognosis, health status assessment and treatment efficacy. 38.3% of investigations contributed to diagnosis, followed by 29% for treatment efficacy. 17.8% contributed to health status assessment and 15% to prognosis, which is depicted through a pie chart in Figure 9. The specific details of the reviewed studies are described as follows

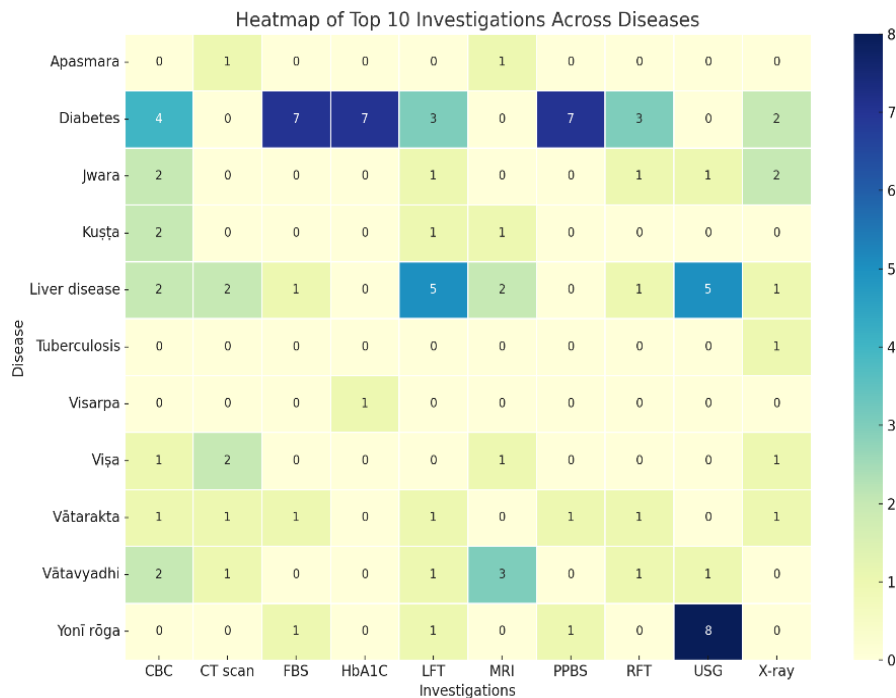


Figure 8- Heatmap of top 10 investigations across diseases.

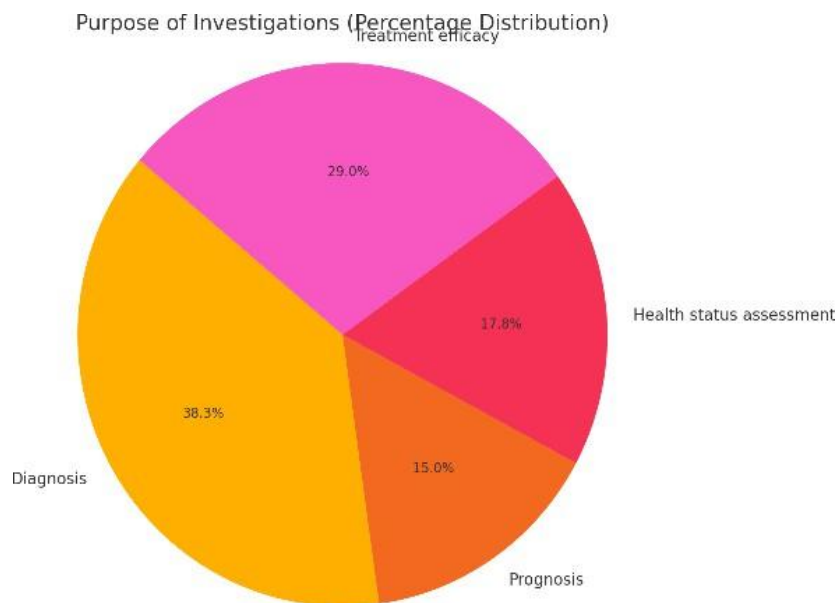


Figure 9- Purpose of investigation

Diagnosis

In some instances, a specific investigation will only aid in the final diagnosis. In the case of motor neuron disease by Policepatil BV even though Concentric Needle Electromyography (CNEMG), Nerve Conduction Study, MRI, and CBC were conducted, CNEMG only aided in the final diagnosis of Motor Neuron Disease. In *sirāgata vāta* by Singh, even if the patient had lower abdominal pain, USG abdomen aided in ruling out that there was no pathology related to the abdomen and USG lower limbs helped in ruling out deep vein thrombosis. Skin biopsy helped in the diagnosis of medium-sized vessel vasculitis. In two different cases of PCOS, in one case by

Pardhekar AD, only USG was done to confirm diagnosis, while in the other case by Jadhav R, both the diagnostic criteria and ultrasonography were used.

Prognosis

In the case series on diabetic foot ulcer by Shinde PS, diagnostic tools were used for confirmation and staging of diabetic foot ulcer. Higher infection markers (WBC, ESR) and diabetic profile helped in understanding the potential risk for sepsis. The diagnosis of the ulcer using X-ray and its staging helped in planning treatment. The infection level would have been difficult to find out without investigations.

Health status assessment

Complete blood count is a widely utilised laboratory test. It gives valuable information about the body system, which in turn give clinical implications about the prognosis, response to treatment and recovery. In Guillain-Barré syndrome by Tubaki BR investigations like haemogram, renal and liver function test, electrolytes, Creatinine Phosphokinase (CPK) were done to assess the general health of the patient. The diagnosis was done as *sarvāṅgavāta* based on the Āyurvedic *lakshanās*. In gynecological cases, the health assessment investigations include urine routine examinations to rule out any infections. In the case of psoriatic erythroderma by Abhilesh VS blood investigations were used in confirmation of psoriasis. CBC and LFT were done for general health assessment. Nowadays, all the investigations are performed as routine health check-ups extensively even without any symptoms in healthy individuals.

In the study of by Yadav PK the patient was diagnosed with hydatid cyst in lungs in routine medical check-up in private hospital by patients own will. Diagnostic tools in this case helped in an accidental diagnosis. But major multi-speciality hospitals are extensively doing routine check-ups through different packages using all the diagnostic tools, including imaging techniques. This, in turn, may lead to the overutilisation of these technological tools.

Treatment efficacy

In the study by Sahu AK on liver disease and the study by Rajoria K on muscular dystrophy, the investigations were used for diagnosis, and all of them were done before treatment and repeated after treatment, which ensured proper validation and efficacy of the treatment. Among all the studies reviewed, even if extensive investigations would have been conducted for diagnosis, essential investigations were only done after treatment. Parmar JR et al.'s study on systemic sclerosis and Rajoria K on muscular dystrophy, only CPK was done after treatment. The occlusion of the brachial artery in the upper limb ischemia case by Singh SK was confirmed using CT angiography; after treatment, the removal of the occlusion can only be known using the same. Thus, in such cases, the investigations play a key role in assisting physicians to understand the treatment efficacy. In the study on epilepsy, EEG, MRI, and CT scan were utilised for diagnostic and prognostic purposes and to plan the treatment and duration of the intervention after observing the structural changes in the brain. But the treatment was primarily planned based on the clinical signs and symptoms.

Safety

In the case of diabetic foot ulcer with osteomyelitis before leech therapy, CBC and platelet test were done to avoid complications and also in the study by Sawarkar G et al. in grade 2 fatty liver before *siravedha*, Hb, BT, and CT were done, but in the case of palmoplantar psoriasis (*vipādika*) no blood investigations were mentioned before leech therapy. This implies that the investigations before para-surgical procedures are not standardised in Ayurveda clinical practice. Physicians advise the investigations based on their clinical knowledge. In blood therapies, Hb along with BT and CT should be done to avoid any complications. Physicians advise the investigations based on their clinical knowledge. In the case report on the clinical Effectiveness of *Viddha Karma* in PCOS by Jibkate B, they did not conduct routine blood examinations before the *Viddha Karma* was done at the junction of 1/3rd Superior Iliac Crest and 2/3rd of Pubic Symphysis with disposable needle no. 26, which is *Ardha Brihi*.

Safety of Ayurvedic medications was assessed through RFT and LFT in only 2 studies by Shinde

PS and Thomas T. The safety assessment data using these investigations can help to rule out toxicity after treatment, as in recent years, increasing studies have been published in reputed journals regarding the hepato-renal toxicity due to Ayurvedic medications.

Financial burden

In the case of psoriatic erythroderma by Girhepunje KS, the patient refused the advice to reinvestigate autoimmune profile (Anti-Nuclear Antibody, Serum immunoglobulin E, C-reactive protein, etc.) and skin biopsy, but he refused due to financial problems, claiming that he had already done ANA for diagnosis of psoriasis. This implies that sometimes repeated investigations lead to a burden for patients with poor socio-economic backgrounds. The combined effect of Ayurvedic preparations along with dietary protocol was effective in the management of PsE. Thus, in this case, without the extensive investigation of the autoimmune profile and skin biopsy, the case was also successfully managed.

Ayurveda diagnostic methods

In Ayurveda, health is not merely the absence of disease but also harmony and clarity of the soul, senses, and mind. In total, only three studies explained the *aṣṭavidha parīkṣa*. Among these, two studies were by the same author. *Daśa-vidha parīkṣa* was done in five studies among the 43 studies reviewed. In one study by Sanjay Jadhav S, the *trividha parīkṣa- darśana, sparśana, praṣṇa* in Āyurveda was reported. These examination methods are essential in the proper examination of the patient and for planning the treatment protocol. Even though Ayurvedic examination includes urine and stool examinations as essential in current practice its use is in very minimal number of cases. These examinations include not only the wastes of the body but also the examinations of *indriya*. The examinations of *indriya* can give essential details about the patient and the psycho somatic aspect of the disease.

In the majority of cases, treatment is considered after considering the symptoms or involved dosha. In the two psoriasis cases, skin biopsy was used to confirm diagnosis and the dosha involved was considered for treatment. Even though both the cases were diagnosed as psoriatic erythroderma, dosha was considered while planning treatment. In the first case pitta-rakta-vata involvement was seen and in the second case vata- kapha involvement and diagnosed as kitibha kushta. The focus is given more on the assessment of the symptoms, then dosha

assessment and tailoring the treatment based on it, which is correct but many other factors for assessment explained in Ayurveda is not documented.

Lack of scientific reporting

Even though in daily practice in Ayurvedic OPD and IPD it is seen that patients with IVDP are hospitalised and treated. In the study on IVDP, it is mentioned that very few cases have reported the effect of Ayurveda treatment on herniated disc on the basis of MRI findings. This shows the lack of documentation and scientific evidence in the field of Ayurveda medical practice. The present-day diagnostic tools can be taken help to ensure enough scientific evidence and rigor to published research.

Conclusion

Treatment of human beings without the support of modern diagnostic tools is increasingly difficult in the contemporary AI- driven era. Technological advancements are always a boon to society when used judiciously, and the same applies to the field of Ayurveda medicine also. However, Ayurvedic clinical practice still requires stronger scientific evidence to support its wider integration into mainstream healthcare. Therefore, objective assessments are essential in the present-day medical world for scientific validation of the principles and practice of Ayurveda. The success of any health care system depends on the safety and efficacy of its interventions. The modern medical fraternity criticises Ayurvedic drugs because of concerns regarding hepatotoxicity and nephrotoxicity. Routine evaluation of liver and renal function before and after treatment could

help establish the safety profile of Ayurvedic drugs, although this practice is not yet consistently followed by Ayurvedic physicians.

While the documentation of case reports in Ayurveda is steadily increasing, these must be supported not only by modern diagnostic findings but also by Ayurvedic diagnostic methods. Ayurvedic physicians increasingly use diagnostic technologies judiciously, selecting investigations according to the clinical requirements of each case. Investigations such as radiography, computed tomography, ultrasonography, and magnetic resonance imaging can support diagnosis and management, particularly in gynaecological and orthopaedic conditions. In several situations, these technologies help identify disease features relevant to Ayurvedic diagnosis and facilitate the individualisation of treatment.

Nevertheless, while incorporating modern technology into Ayurveda, the principles of *trisūtra*⁴⁹ cause, symptomatology and therapeutics explained in Ayurvedic classics should not be overlooked. The diagnostic tools contribute significantly to *rōga parīkṣa*, giving deep insights into the disease pathology; however, they offer limited insight into the patient as a whole. Ayurveda diagnostic methods like *daśa-vidha parīkṣa*, *aṣṭavidha parīkṣa*, *Śadvidha parīkṣa*, *trividha parīkṣa*- *darśana*, *sparśana*, *praśṇa*- help in-depth understanding of the patient through physical, physiological and psychological aspects and then administer the *cikitsa*. The mala and *mūtra parīkṣa* in *aṣṭavidha parīkṣa* should be done to assess the general health of the patient. The traditional method is practically inconvenient; thus, urine and stool examinations done in the current time will help. Ayurveda is a holistic branch of medicine based on the principles of personalised medicine. To practice personalised medicine, thorough knowledge about the patient's details is essential. Diagnostic tools will definitely aid in diagnosis, prognosis, health status and treatment efficacy, but will not help in assessing the sense organs, soul and mind, which are essential according to Ayurveda to become disease-free. The impact of technology has improved diagnostics and treatments but reduced interactions with patients.

Consequently, disciplines within Medical Humanities, including Narrative Medicine and clinical psychology, have gained increasing importance over the past decade. Artificial intelligence is fundamentally dependent on available data and does not possess emotional intelligence⁵⁰. Diagnostic technologies should therefore support, rather than replace, the clinical judgment of the physician and should never be used indiscriminately. This principle is consistent with the teaching attributed to Caraka: a physician who fails to understand the patient's inner self through the illumination of knowledge and intellect cannot successfully treat disease.⁵¹ The limitation of this review is that studies which are included in other databases like Web of Science, Scopus, Embase can also be taken, which were excluded in this review due to lack of free access.

Registration

The Scoping Review protocol is registered under the OSF registry.

Funding & Support- The article is written based on the prize-winning essay competition VIDVATTA 2025 conducted by Vaidyaratnam Ayurveda College by the first author.

Table 1- Data representing the 43 articles reviewed

Sl No	Author's name, publication year	Journal/Book	Investigation used	Diagnosis	Prognosis	Health assessment	Treatment efficacy	Safety	Ashtasthana pariksha	Dasavidha pariksha
1	Adiga SH, 2024 ⁶	Epilepsy Behav	EEG, MRI, CT scan	✓	✓	✗	✗	✗	✗	✗
2	Kumari S, 2024 ⁷	J Ayurveda Integr Med	FBS, PPBS, HbA1C	✓	✗	✗	✓	✗	✗	✗
3	Shindhe PS, 2023 ⁸	J Ayurveda Integr Med	FBS, PPBS, HbA1C, X-ray, ESR, CBC, RFT	✓	✓	✓	✓	✓	✗	✗

4	Thomas 2023 ⁹	V, J Ayurveda Integr Med	CBC, FBS, PPBS, HbA1C, LFT, RFT, Lipid profile	✓	✓	✓	✓	✓	×	×
5	Bopparathi S, 2023 ¹⁰	Int J Surg Case Rep	X-ray, CBC, ESR, CRP, FBS, PPBS, HbA1C, LFT, Platelet	✓	✓	✓	✓	×	×	×
6	Chattopadhyay K, 2022 ¹¹	Front Pharmacol	FBS, PPBS, HbA1C, Lipid profile, HOMA-IR	✓	✓	✓	✓	×	×	×
7	Nakanekar A, 2022 ¹²	J Ayurveda Integr Med	CBC, FBS, PPBS, HbA1C, LFT, RFT, Lipid profile, Sleep study	✓	×	✓	✓	×	✓	×
8	Kumari S, 2022 ¹³	J Ayurveda Integr Med	FBS, PPBS, HbA1C	✓	✓	×	✓	×	×	×
9	Sardeshmukh S, 2021 ¹⁴	J Ayurveda Integr Med	CBC, LFT, RFT, X-ray, CT scan, USG, Biopsy, Karyotyping	✓	×	✓	✓	×	×	×
10	Khobarkar P, 2021 ¹⁵	J Ayurveda Integr Med	CBC, ECG, X-ray	✓	×	✓	×	×	✓	×
11	Kumar Bhatted S, 2023 ¹⁶	J Ayurveda Integr Med	AEC, IgE	✓	✓	×	✓	×	×	×
12	Girhepunje KS, 2022 ¹⁷	J Ayurveda Integr Med	MRI, CBC, ESR, Biopsy	✓	×	✓	✓	×	×	×
13	Abhilesh VS, 2021 ¹⁸	Perm J	Biopsy, CBC, LFT	✓	×	✓	×	×	×	×
14	Ratha KK, 2016 ¹⁹	Ayu	Biopsy	✓	×	×	×	×	×	×
15	Sawarkar G, 2024 ²⁰	J Pharm Bioallied Sci	Lipid profile, LFT, Hb, BT (Bleeding time), CT (Clotting time)	✓	×	✓	✓	×	×	×
16	Shankar P, 2024 ²¹	Case Reports Hepatol	MRI, USG, LFT	✓	×	×	✓	×	×	×
17	Yadav PK, 2024 ²²	J Ayurveda Integr Med	X-ray, CT scan	✓	×	×	✓	×	×	×
18	Sahu AK, 2022 ²³	J Ayurveda Integr Med	USG, Aspartate aminotransferase, Alanine transaminase, FBS, Lipid profile, Serum gamma-glutamyl transferase, Serum amylase	✓	×	×	✓	×	×	×
19	Mishra S, 2022 ²⁴	J Ayurveda Integr Med	CBC, LFT, Stool ova cyst test, USG, RFT	✓	✓	✓	✓	×	×	×
20	Kumar T, 2020 ²⁵	J Ayurveda Integr Med	MRI, USG, Hb, LFT, Urine copper level	✓	×	×	✓	×	×	×
21	Bhagiya SG, 2017 ²⁶	Ayu	CBC, USG	✓	×	✓	✓	×	×	×
22	Aswathy G, 2016 ²⁷	Anc Sci Life	CT scan, Endoscopy, LFT	✓	✓	×	✓	×	×	×
23	Rai S, 2016 ²⁸	Ayu	Hb	✓	×	×	✓	×	×	×
24	Samal J, 2015 ²⁹	J Intercult Ethnopharmacol	X-ray	✓	×	×	✓	×	×	×
25	Parmar JR, 2024 ³⁰	J Ayurveda Integr Med	Hb, Platelet, RA, ANA, CRP, X-ray, CT scan, Endoscopy	✓	✓	×	×	×	×	×
26	Singh SK, 2024 ³¹	J Ayurveda Integr Med	CBC, ESR, LFT, RFT, FBS, PPBS, Lipid profile, CT Angiography	✓	×	✓	✓	×	×	×
27	Policepatil BV, 2022 ³²	J Ayurveda Integr Med	CNEMG, Nerve Conduction Study, MRI, CBC	✓	×	×	×	×	×	×
28	Rajoria K, 2022 ³³	J Ayurveda Integr Med	EMG, Serum creatinine, ESR, CPK, Thyroid profile	✓	×	×	×	×	×	✓
29	Tubaki BR, 2020 ³⁴	J Ayurveda Integr Med	CBC, LFT, RFT, Creatinine	×	×	✓	×	×	×	×

			Phosphokinase (CPK)							
30	Sawarkar P, 2024 ³⁵	F1000Res	CT, MRI	✓	×	×	×	×	×	×
31	Deshpande SV, 2022 ³⁶	J Ayurveda Integr Med	MRI	✓	✓	×	✓	×	×	×
32	Singh SK, 2021 ³⁷	J Ayurveda Integr Med	ANA, Anti-ds DNA, Urine, USG, CT scan, Biopsy	✓	×	✓	×	×	×	×
33	Nakanekar A, 2020 ³⁸	J Ayurveda Integr Med	HbA1C, RBS	×	×	✓	×	×	✓	✓
34	Ekka R, 2024 ³⁹	J Ayurveda Integr Med	CT scan, CBC, X-ray, LFT, RFT, Toxic elements haemogram	✓	✓	×	✓	×	×	×
35	Varghese J, 2023 ⁴⁰	J Ayurveda Integr Med	CT scan, Arterial Blood Gases (ABGs), MRI, ECG, EEG	✓	✓	×	✓	×	×	✓
36	Asmabi MA, 2024 ⁴¹	J Ayurveda Integr Med	USG, Laparoscopy	✓	✓	×	✓	×	×	×
37	Sanjay Jadhav S, 2023 ⁴²	J Ayurveda Integr Med	USG	✓	×	×	✓	×	×	✓
38	Chaudhari BV, 2024 ⁴³	J Pharm Bioallied Sci	Urine, HIV, USG	✓	✓	✓	×	×	×	✓
39	Katakound SD, 2017 ⁴⁴	Anc Sci Life	USG, Thyroid profile, LFT, BUL, TORCH, IgG/IgM, AFPA (Anti-Phospholipid Antibody)	✓	✓	✓	✓	×	×	×
40	Jibkate B, 2024 ⁴⁵	J Pharm Bioallied Sci	USG	✓	×	×	✓	×	×	×
41	Pardhekar AD, 2024 ⁴⁶	J Pharm Bioallied Sci	USG, Hb, FBS, PPBS	✓	×	✓	✓	×	×	×
42	Jadhav R, 2024 ⁴⁷	Cureus	USG	✓	×	×	✓	×	×	×
43	Asmabi MA, 2024 ⁴⁸	J Ayurveda Integr Med	USG, Semen analysis	✓	×	×	✓	×	×	×

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