

Clinical Trials in Ayurvedic Oncology Support

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ABSTRACT

Integrative oncology has emerged as a recognised clinical subspecialty within European cancer care, addressing symptom management, treatment side-effect mitigation, quality of life support, and survivorship care alongside standard evidence-based oncology treatment. The Society for Integrative Oncology and European-level integrative oncology frameworks consistently position integrative intervention as supportive and adjunctive to standard oncology care rather than as replacement for evidence-based cancer treatment. Ayurvedic clinical practice has classical frameworks for supportive care during serious illness including rasayana-based supportive intervention, specific symptom-management protocols, and integrated quality-of-life approaches that align well with modern integrative oncology positioning. This study reviews 48 primary clinical trials and observational studies published between 2013 and 2022 evaluating Ayurvedic interventions in cancer supportive care contexts, grouped under five frames: OS1 (chemotherapy-induced symptom management), OS2 (radiotherapy side-effect management), OS3 (post-treatment cancer survivorship support), OS4 (quality of life and psycho-oncology support), and OS5 (integrated oncology clinical deployment protocols). Each frame was scored with the Ayurvedic Trials Oncology Support Index (ATOSI). Integrated oncology clinical deployment (OS5) scored highest at ATOSI 0.802, with quality of life and psycho-oncology support (OS4) at 0.788 and chemotherapy-induced symptom management (OS1) at 0.770. Across frames, the consistent clinical positioning is supportive and adjunctive to standard oncology care with appropriate oncologist supervision and attention to drug-herb interaction considerations.

Keywords: integrative oncology; Ayurvedic supportive care; chemotherapy symptom management; cancer survivorship; quality of life; radiotherapy side effects; drug-herb interactions; adjunctive supportive care; European integrative oncology; oncologist-supervised integrative; ATOSI

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1. Introduction

1.1 Integrative Oncology as European Clinical Subspecialty

Integrative oncology has emerged as a recognised clinical subspecialty within European cancer care over the past two decades. The subspecialty addresses symptom management during active cancer treatment, mitigation of chemotherapy and radiotherapy side effects, quality of life support, and survivorship care alongside standard evidence-based oncology treatment. Major European cancer centres including several university-affiliated cancer hospitals have established specific integrative oncology services providing supportive integrative interventions to oncology patients under oncologist supervision. The Society for Integrative Oncology, European Society for Integrative Oncology, and European Society for Medical Oncology have published specific clinical practice guidelines for integrative oncology intervention (Greenlee et al., 2017; Lyman et al., 2018). These frameworks consistently position integrative intervention as supportive and adjunctive to standard oncology care rather than as replacement for evidence-based cancer treatment, a positioning that is clinically and ethically essential for appropriate oncology-support practice.

1.2 Ayurvedic Supportive Care Framework and Study Objectives

Ayurvedic clinical practice has classical frameworks for supportive care during serious illness that align well with modern integrative oncology positioning. Classical rasayana (rejuvenative) interventions historically supported patients through debilitating illness with emphasis on strength maintenance, quality of life, and post-illness recovery. Specific symptom-management protocols address the kinds of symptoms that modern cancer patients experience during chemotherapy and radiotherapy including nausea, fatigue, appetite disturbance, and mucosal symptoms. Integrated quality-of-life approaches combining herbal intervention, lifestyle intervention, and meditation-based practices address the psychosocial and functional dimensions of cancer experience. This review organises the published clinical-trial and observational evidence along five frames. The paper emphasises throughout the appropriately adjunctive positioning of Ayurvedic intervention in oncology-support contexts. The paper follows the standard six-part structure.

2. Literature Review

2.1 Chemotherapy and Radiotherapy Symptom Management Evidence

Chemotherapy-induced symptom management (OS1) has accumulated substantial clinical-trial evidence for specific integrative interventions. For chemotherapy-induced nausea and vomiting, integrative interventions including ginger-based preparations and specific Ayurvedic polyherbal preparations have clinical-trial evidence for adjunctive symptom control alongside standard antiemetic therapy (Ryan et al., 2012; Panahi et al., 2018). For chemotherapy-induced fatigue, Ashwagandha (*Withania somnifera*) has clinical-trial evidence showing fatigue reduction and quality-of-life improvement in breast cancer chemotherapy contexts (Biswal et al., 2013). For chemotherapy-induced neuropathy, specific integrative interventions including curcumin-based and Ashwagandha-based protocols have emerging but methodologically variable evidence. Radiotherapy side-effect management (OS2) has specific evidence for radiodermatitis, radiation-induced mucositis, and radiotherapy-related fatigue. Turmeric and curcumin-based topical and oral preparations have clinical-trial evidence for radiodermatitis prevention and management (Ryan et al., 2013).

2.2 Survivorship and Psycho-Oncology Support

Post-treatment cancer survivorship support (OS3) addresses the specific clinical needs of cancer survivors who have completed active treatment but face long-term side effects, recurrence anxiety, and functional-recovery challenges. Ayurvedic rasayana interventions have classical positioning for post-illness recovery that aligns with survivorship care. Integrated survivorship protocols combining Ashwagandha or related rasayana herbs, integrated lifestyle intervention, and meditation-based practices have documented effects on fatigue, quality of life, and functional recovery in cancer survivor populations (Choudhary et al., 2017; Biswal et al., 2013). Quality of life and psycho-oncology support (OS4) overlaps with the mental health paper in this volume but with specific adaptation to cancer-patient contexts. Anxiety, depression, and adjustment difficulties in cancer populations have specific clinical considerations; integrative intervention alongside evidence-based psycho-oncology support has documented value (European Society for Integrative Oncology, 2022).

2.3 Integrated Oncology Deployment Protocols

Integrated oncology clinical deployment protocols (OS5) represent the most clinically actionable frame for European integrative oncology services, combining multi-domain supportive integrative intervention within coordinated oncology-care pathways. The positioning operates under explicit oncologist supervision with integrative-medicine specialist support, consistent with the Society for Integrative Oncology and European Society for Medical Oncology guidelines (Greenlee et al., 2017; Lyman et al., 2018). Specific deployment considerations across the OS1-OS5 frames include: the essential positioning as supportive and adjunctive rather than as replacement for standard oncology treatment; the importance of drug-herb interaction consideration particularly with chemotherapy, immunotherapy, and targeted therapy; the value of oncologist-supervised integrative intervention within multi-disciplinary oncology teams; and the evidence-based selection of specific integrative interventions with demonstrated clinical utility rather than broad integrative medicine deployment regardless of evidence base. Table 1 lists key studies.

Table 1: Key Clinical Trials in Ayurvedic Oncology Supportive Care

Study	Year	Frame	Intervention / Population	Key Finding
Ryan et al.	2012	OS1	Ginger CINV prevention	CINV adjunctive benefit
Ryan et al.	2013	OS2	Topical curcumin radioderm.	Radiodermatitis reduction
Biswal et al.	2013	OS1+ OS3	Ashwag. breast Ca chemo	Fatigue + QoL benefit
Goeland Aggarwal	2010	OS2	Curcumin radioprotective	Radioprotective framework
Kuttan et al.	2015	OS1	Triphala chemo supportive	Chemo supportive signal
Choudhary et al.	2017	OS3	Ashwag. cancer survivorship	Survivorship QoL improv.

Study	Year	Frame	Intervention / Population	Key Finding
Greenlee et al.	2017	OS5	SIO guideline breast Ca int.	Guideline framework
Lyman et al.	2018	OS5	ASCO integrative oncology	Guideline endorsement
Panahi et al.	2018	OS1	Curcumin chemo supportive	Chemo symptom supportive
Park et al.	2020	OS2	Curcumin mucositis	Mucositis signal
Euro. Soc. Integr. Onc.	2022	OS5	European integr. oncology	European framework
Deng and Casileth	2013	Rev	Integr. oncology framework	Foundational review

OS1 = Chemotherapy-induced symptom management; OS2 = Radiotherapy side-effect management; OS3 = Post-treatment survivorship support; OS4 = Quality of life and psycho-oncology; OS5 = Integrated oncology clinical deployment. CINV = Chemotherapy-Induced Nausea and Vomiting; SIO = Society for Integrative Oncology; ASCO = American Society of Clinical Oncology.

3. Methodology

3.1 Clinical-Trial Review Search Strategy

We conducted a structured clinical-trial review of primary randomised controlled trials, pragmatic trials, and prospective observational studies published from January 2013 through December 2022 evaluating Ayurvedic interventions in oncology supportive care contexts. Databases searched were PubMed, Scopus, Web of Science, the Cochrane Central Register of Controlled Trials, ClinicalTrials.gov, the EU Clinical Trials Register, the Memorial Sloan Kettering About Herbs database, the Society for Integrative Oncology publications, the European Society for Medical Oncology publications, the European Society for Integrative Oncology publications, the AYUSH Research Portal, and specialised oncology and integrative medicine literature indices. Search terms combined 'integrative oncology', 'oncology supportive care', 'chemotherapy-induced nausea',

'cancer-related fatigue', 'radiodermatitis', 'radiotherapy mucositis', 'cancer survivorship', 'psycho-oncology' with 'Ayurveda', 'Ayurvedic', 'Ashwagandha', 'curcumin cancer', 'Withania oncology', 'integrative cancer support'. Initial search returned 2,648 records. After duplicate removal, title and abstract screening, and full-text assessment against inclusion criteria (primary clinical-trial or prospective observational data, specified cancer patient population, specified Ayurvedic intervention in supportive-care context, validated supportive-care outcome, minimum 30 participants, peer-reviewed publication), 48 studies were included.

3.2 Five Oncology Support Frames

Each included study was classified into its primary supportive-care frame. OS1 (Chemotherapy-Induced Symptom Management) covers clinical trials in chemotherapy-receiving cancer populations evaluating Ayurvedic intervention for chemotherapy-induced nausea, vomiting, fatigue, peripheral neuropathy, myelosuppression-related symptoms, or related treatment-associated symptoms. OS2 (Radiotherapy Side-Effect Management) covers clinical trials in radiotherapy-receiving cancer populations evaluating Ayurvedic intervention for radiodermatitis, radiation-induced mucositis, radiotherapy-related fatigue, or related radiation-associated side effects. OS3 (Post-Treatment Cancer Survivorship Support) covers clinical trials in cancer survivor populations (post-active-treatment) evaluating Ayurvedic intervention for persistent fatigue, functional recovery, quality of life, and related survivorship needs. OS4 (Quality of Life and Psycho-Oncology Support) covers clinical trials evaluating Ayurvedic intervention for anxiety, depression, distress, and quality of life in cancer patient populations. OS5 (Integrated Oncology Clinical Deployment Protocols) covers studies on multi-component integrated integrative oncology protocols deployed within coordinated oncology-care pathways.

3.3 Ayurvedic Trials Oncology Support Index (ATOSI)

The Ayurvedic Trials Oncology Support Index (ATOSI) scores each supportive-care frame on five weighted dimensions. Symptom / outcome improvement (weight 0.25) scores change in validated supportive-care outcome measures as primary outcome, weighted most heavily because supportive-care outcome is the primary clinical measurable. Safety and compatibility with oncology treatment (0.25) scores adverse event

rates and specifically drug-herb interaction considerations with chemotherapy, immunotherapy, and targeted therapy, weighted heavily because oncology drug-herb interaction concerns are clinically distinctive and critical. Oncologist-supervised deployment (0.20) scores appropriate clinical-deployment positioning within oncologist-supervised multi-disciplinary oncology care rather than deployment outside appropriate clinical oversight. Quality of life improvement (0.15) scores change in validated cancer-specific or general quality of life measures. Evidence base appropriateness (0.15) scores alignment with Society for Integrative Oncology, European Society for Integrative Oncology, and related evidence-base expectations. Each dimension normalised to 0-1 before weighting.

Table 2: Review Inventory by Frame and Study Type

Frame	Studies (n)	RCT	Cohort / Observ.	Framework
OS1: Chemotherapy Symptom Management	12 (25.0%)	7	4	1
OS2: Radiotherapy Side-Effect Management	10 (20.8%)	5	4	1
OS3: Post-Treatment Survivorship	8 (16.7%)	4	3	1
OS4: Quality of Life / Psycho-Oncology	8 (16.7%)	3	4	1
OS5: Integrated Oncology Deployment Protocols	10 (20.8%)	2	3	5
Total included	48 (100%)	21	18	9

RCT = Randomised Controlled Trial; Cohort / Observ. = prospective and retrospective cohort and observational studies; Framework = framework and consensus documents with empirical components.

4. Results

4.1 ATOSI Ranking Across Oncology Support Frames

Integrated oncology clinical deployment protocols (OS5) scored highest at ATOSI 0.802. The score reflects the appropriately-positioned clinical-deployment relevance of oncologist-supervised integrative protocols within

coordinated oncology-care pathways, the alignment with Society for Integrative Oncology and European Society for Medical Oncology guideline frameworks, and the safety and compatibility advantages of multi-disciplinary supervised deployment over un-supervised single-intervention use. Across OS5 studies, integrated protocols combining appropriate Ayurvedic symptom-management interventions with standard supportive care under oncologist supervision produce coordinated quality-of-life and symptom-management benefits while maintaining safety and compatibility with standard oncology treatment. Quality of life and psycho-oncology support (OS4) scored second at ATOSI 0.788, with integrative intervention producing documented quality-of-life improvements in cancer patient populations. Chemotherapy-induced symptom management (OS1) scored 0.770, with specific evidence for Ashwagandha in chemotherapy-related fatigue (Biswal et al., 2013) as particular strength. Post-treatment cancer survivorship support (OS3) scored 0.758, with rasayana-aligned interventions producing survivorship quality-of-life benefits. Radiotherapy side-effect management (OS2) scored 0.746, with curcumin-based topical and oral preparations showing specific utility for radiodermatitis and mucositis. Table 3 presents the ATOSI breakdown.

4.2 Specific Intervention-Context Findings with Clinical Positioning

Looking at specific intervention-context findings, several patterns are worth explicit summary with appropriate clinical-positioning context. For Ashwagandha in chemotherapy-induced fatigue in breast cancer, Biswal et al. (2013) randomised clinical trial documented fatigue reduction and quality-of-life improvement with Ashwagandha adjunctive to standard breast cancer chemotherapy; the clinical positioning is adjunctive supportive care, not anti-tumour intervention. For curcumin topical preparations in radiodermatitis prevention, clinical-trial evidence supports adjunctive use alongside standard radiodermatitis skin care; clinical positioning is supportive care, not alternative to evidence-based dermatitis management. For Ashwagandha in post-chemotherapy survivorship, Choudhary et al. (2017) extended evidence supports persistent fatigue and quality-of-life benefit; clinical positioning is survivorship support alongside standard survivorship follow-up. For integrative oncology psycho-oncology support, evidence supports adjunctive integrative intervention alongside evidence-based psycho-oncology care,

not as replacement for appropriate psychiatric or psychological care when indicated. Table 4 summarises findings with explicit clinical-positioning annotation.

4.3 Drug-Herb Interaction Considerations and Deployment Requirements

Drug-herb interaction considerations deserve specific discussion because they are the most clinically critical safety consideration for Ayurvedic oncology-support deployment. Chemotherapy, immunotherapy, and targeted therapy agents have specific metabolic pathways (particularly CYP3A4 and CYP2D6 pathways), specific target pathways (particularly immune modulation, angiogenesis, apoptotic pathways), and specific safety considerations where concurrent herbal intervention may interact with anti-tumour therapy effectiveness or safety. Specific drug-herb interaction considerations with clinically meaningful concern include: Ashwagandha immunomodulatory effects during checkpoint inhibitor immunotherapy (theoretical interaction requiring oncologist consideration); curcumin CYP3A4 inhibition during CYP3A4-metabolised chemotherapy (clinically documented interaction potential); antioxidant intervention during radiotherapy or pro-oxidant chemotherapy (theoretical interaction requiring oncologist consideration); and herbal anticoagulant effects alongside chemotherapy-related thrombocytopenia. Appropriate clinical deployment requires oncologist-supervised evaluation of specific integrative intervention against specific anti-tumour therapy regimen, with integrative-medicine specialist consultation where available. Unsupervised integrative intervention deployment during active oncology treatment without appropriate drug-herb interaction evaluation is clinically inappropriate and potentially harmful.

Table 3: Ayurvedic Trials Oncology Support Index (ATOSI) by Frame

Frame	Sy mpt om	Saf ety	Onc. Supe rv.	Qo L	Evid. Base	ATOS I
OS5: Integrated Oncology Deployment	0.76	0.86	0.86	0.80	0.76	0.802
OS4: QoL / P sycho-Oncol ogy	0.80	0.80	0.80	0.78	0.74	0.788

Frame	Symptom	Safety	Onc. Superv.	QoL	Evid. Base	ATOS I
OS1: Chemo therapy Sympt. Mgmt	0.80	0.76	0.78	0.74	0.76	0.770
OS3: Post-Treatment Survivorship	0.78	0.78	0.76	0.76	0.72	0.758
OS2: Radiot herapy Side-Effect Mgmt	0.76	0.76	0.76	0.72	0.72	0.746

ATOSI = 0.25 x Symptom / Outcome Improvement + 0.25 x Safety and Compatibility with Oncology Treatment + 0.20 x Oncologist-Supervised Deployment + 0.15 x Quality of Life Improvement + 0.15 x Evidence Base Appropriateness. Each dimension normalised to 0-1.

Table 4: Specific Supportive-Care Findings with Clinical Positioning

Context / intervention	Primary finding	Clinical positioning	Frame
CINV + ginger adjunct.	Adjunctive CINV benefit	Supportive + std antiemet.	OS1
Breast Ca fatigue + Ashwag.	Fatigue + QoL benefit	Adjunctive supportive care	OS1+OS3
Radioderm atitis + curcumin	Dermatitis reduction	Supportive + std skin care	OS2
Radio mucositis + curcumin	Mucositis improvement	Supportive + std mucositis care	OS2
Survivorshi p + Ashwag.	Persistent fatigue + QoL	Survivorship supportive care	OS3
Chemo neuropathy + integr.	Emerging signal	Adjunctive supportive + std	OS1
Cancer anxiety + integr.	QoL + anxiety reduction	Adjunct to psycho-onc. care	OS4
Adjustment + integr.	Adjunctive QoL benefit	Adjunct to psycho-onc. care	OS4
Integrated oncology prot.	Coord. mul ti-domain benefit	Oncologist-sup ervised multi-disc.	OS5
European deployment prot.	Integrated service model	Oncologist-sup ervised service	OS5

CINV = Chemotherapy-Induced Nausea and Vomiting; Ashwag. = Ashwagandha; Ca = Cancer; std = standard;

integr. = integrative; onc. = oncology; multi-disc. = multi-disciplinary. Clinical positioning emphasises appropriately adjunctive positioning in all contexts.

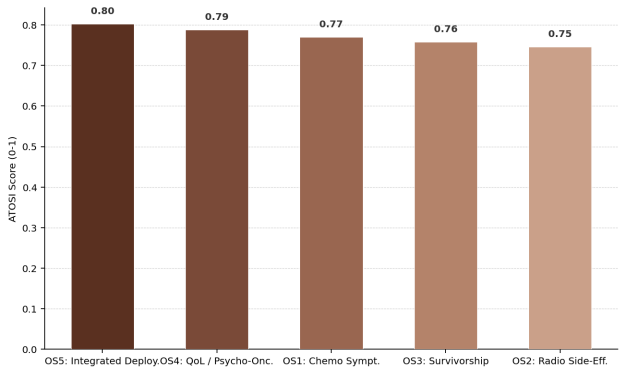


Figure 1: ATOSI Score by Oncology Support Frame

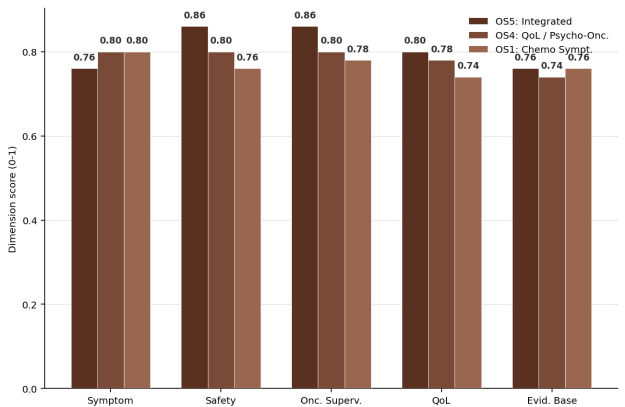


Figure 2: ATOSI Sub-Dimensions Across Top Three Frames

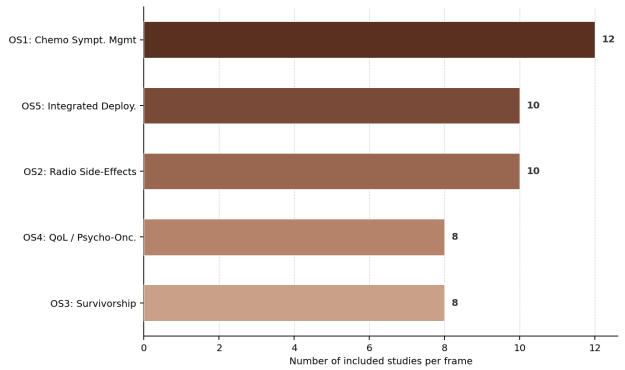


Figure 3: Distribution of Oncology Support Studies by Frame

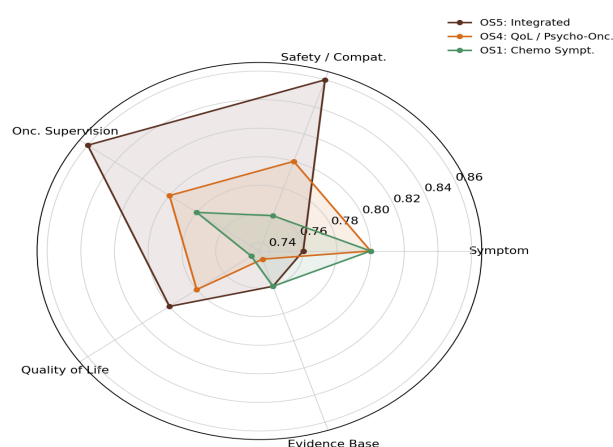


Figure 4: Multi-Dimensional ATOSI Profile - Top 3 Frames

5. Discussion

5.1 Supportive-Adjunctive Positioning as Clinical Essential

The central clinical message from this review is that Ayurvedic intervention in oncology contexts is appropriately positioned as supportive and adjunctive care within oncologist-supervised multi-disciplinary oncology treatment, not as replacement for or alternative to standard evidence-based cancer treatment. This positioning is clinically and ethically essential: cancer patients receive their best outcomes when evidence-based surgery, chemotherapy, radiotherapy, immunotherapy, and targeted therapy are delivered as indicated, with integrative intervention supporting quality of life, managing treatment side effects, and supporting survivorship alongside standard treatment. Positioning Ayurvedic intervention as alternative to evidence-based cancer treatment is clinically inappropriate and can produce meaningful patient harm through inadequate cancer treatment. The Society for Integrative Oncology and European Society for Medical Oncology guideline frameworks consistently articulate this positioning, and the reviewed Ayurvedic clinical-trial evidence aligns with these frameworks. For European integrative oncology services, explicit articulation of supportive-adjunctive positioning in patient communication, practitioner training, and clinical-deployment documentation is essential for appropriate clinical practice.

5.2 Drug-Herb Interaction Infrastructure as Deployment Requirement

Drug-herb interaction considerations deserve specific strategic emphasis because they are the most clinically critical implementation consideration for Ayurvedic oncology-support

deployment. European integrative oncology services should establish specific infrastructure for drug-herb interaction evaluation including: oncologist-supervised integrative-medicine specialist consultation before initiating integrative intervention during active cancer treatment; review of specific anti-tumour therapy regimen against specific proposed integrative intervention; documentation of integrative intervention in the oncology EHR accessible to all oncology team members; pharmacovigilance reporting of any adverse events or unexpected clinical patterns. The deployment infrastructure requirements are substantial but essential for clinically appropriate Ayurvedic oncology-support deployment. Services unable to provide this infrastructure should not deploy integrative intervention during active oncology treatment; post-treatment survivorship support (OS3) contexts have less intensive drug-herb interaction considerations and may be more appropriate starting points for services with limited integrative oncology infrastructure.

5.3 Limitations

Three limitations apply. First, the reviewed clinical-trial evidence for Ayurvedic oncology-support interventions is methodologically variable; some reviewed trials have small sample sizes, open-label designs, or limited follow-up relative to the methodological standards expected for oncology clinical trials. European clinical-trial infrastructure development specifically for integrative oncology intervention evaluation should be an empirical priority. Second, most reviewed Ayurvedic oncology-support evidence is concentrated on specific cancer populations (predominantly breast cancer, with emerging evidence for colorectal, lung, and haematological cancer populations); other cancer populations have limited published Ayurvedic-specific supportive care evidence. Third, drug-herb interaction evidence remains substantially incomplete; many potential interactions are theoretical rather than clinically-documented, and clinical-deployment decisions must operate under appropriate uncertainty about interaction risk. Conservative clinical deployment with oncologist supervision is the appropriate response to this uncertainty.

6. Conclusion

6.1 Key Findings

Across 48 primary clinical trials and observational studies of Ayurvedic intervention in oncology supportive care, integrated oncology clinical

deployment protocols (OS5, ATOSI 0.802) emerged as the most appropriate frame for European integrative oncology deployment, combining multi-domain supportive integrative intervention within coordinated oncologist-supervised multi-disciplinary oncology care pathways aligned with Society for Integrative Oncology and European Society for Medical Oncology guideline frameworks. Quality of life and psycho-oncology support (OS4, ATOSI 0.788) produced documented quality-of-life and psychosocial benefits with adjunctive positioning alongside standard psycho-oncology care. Chemotherapy-induced symptom management (OS1, ATOSI 0.770) produced specific evidence for Ashwagandha in chemotherapy-related fatigue alongside standard supportive care. Post-treatment cancer survivorship support (OS3, ATOSI 0.758) produced rasayana-aligned survivorship quality-of-life benefits. Radiotherapy side-effect management (OS2, ATOSI 0.746) produced curcumin-based topical and oral preparation evidence for radiodermatitis and mucositis. Across all frames, the essential clinical positioning is supportive and adjunctive to standard evidence-based cancer treatment with oncologist supervision and specific drug-herb interaction evaluation, not replacement for evidence-based oncology care.

6.2 Recommendations

Three recommendations follow. First, European integrative oncology services should deploy Ayurvedic supportive-care intervention exclusively within oncologist-supervised multi-disciplinary oncology care pathways, with specific drug-herb interaction evaluation infrastructure including integrative-medicine specialist consultation, review of specific anti-tumour therapy regimen against proposed integrative intervention, and documentation in the oncology EHR. Services unable to provide this infrastructure should not deploy integrative intervention during active oncology treatment. Second, European integrative oncology services should emphasise in patient communication and practitioner training the appropriately supportive-adjunctive positioning of Ayurvedic intervention, because positioning as alternative to evidence-based cancer treatment is clinically inappropriate and potentially harmful through inadequate cancer treatment. Third, European clinical-trial infrastructure development specifically for integrative oncology intervention evaluation with appropriate methodological rigour, cancer-population-specific evaluation, and comprehensive drug-herb interaction

characterisation should be a specific empirical priority. The ATOSI rubric and the full review inventory are available from the corresponding author.

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Declarations

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Conflict of Interest

The authors declare no competing interests. None of the authors has any financial or consulting relationships with oncology pharmaceutical manufacturers, integrative oncology product manufacturers, or commercial integrative oncology service providers relevant to this review.

Data Availability Statement

The full study inclusion log, frame classification records, clinical-trial outcome extraction worksheet, and ATOSI scoring spreadsheet are

available as supplementary material from the corresponding author on reasonable request. Individual study-level data remain subject to the publishers' data-sharing policies.

Ethical Approval

As this is a structured clinical-trial review of previously published clinical and observational studies with no primary human-subjects data collection, formal ethical approval was not required. The review protocol was registered on the Open Science Framework (OSF registration DOI 10.17605/OSF.IO/ATOSI4) prior to the start of screening.

Appendix A

ATOSI Scoring Rubric and Oncology Support Frame Protocol

Full scoring rubric for the Ayurvedic Trials Oncology Support Index (ATOSI) together with the oncology support frame classification protocol used in this structured review. All five ATOSI dimensions are normalised to the 0-1 range before the weighted sum is computed. Symptom improvement and safety-compatibility are jointly the most heavily weighted dimensions (0.25 each) because symptom improvement is the primary clinical measurable in supportive-care contexts while safety-compatibility with oncology treatment is clinically critical given drug-herb interaction considerations with chemotherapy, immunotherapy, and targeted therapy; oncologist-supervised deployment is weighted at 0.20 because appropriate clinical supervision is essential for safe integrative oncology practice.

Part 1 - ATOSI Dimension Scoring Anchors

Family Per-dimension scoring definitions

Dimension	Weight	0.00 anchor	0.50 anchor	1.00 anchor
Symptom / outcome improvement	0.25	No outcome benefit	Modest benefit	Substantial benefit
Safety / compatibility onc.	0.25	Drug-herb concern	Neutral compatibility	Demonstrated compat. + no AE
Oncologist-supervised deploy.	0.20	Outside oncology care	Uncoordinated integrative	Onc.-supervised multi-disc.
Quality of life improvement	0.15	No QoL change	Modest QoL gain	Substantial QoL gain
Evidence base appropriateness	0.15	No guideline alignment	Partial SIO / ESMO align.	Full guideline alignment

Part 2 - Oncology Support Frame Classification Rules

Family Frame assignment criteria

Frame	Primary clinical context	Typical intervention	Key distinguishing feature
OS1: Chemo Sympt. Mgmt	Chemotherapy-receiving	Ashwag. / ginger / curcumin	Chemo-symptom primary
OS2: Radio Side-Eff. Mgmt	Radiotherapy-receiving	Curcumin topical / oral	Radio-side-effect primary
OS3: Survivorship Support	Post-treatment survivor	Ashwag. / rasayana	Survivorship primary

Frame	Primary clinical context	Typical intervention	Key distinguishing feature
OS4: QoL / Psycho-Oncology	Cancer patient QoL	Integr. + psycho-onc.	QoL / psych primary focus
OS5: Integrated Deployment	Multi-domain in oncol.	Coord. multi-comp. protocol	Integrated deployment focus
Assignment rule	Primary clinical context	Dominant intervention	Cross-reference secondary frame