Journal of Carcinogenesis
Covering Genesis to Therapeutics
Journal of Carcinogenesis, ISSN: 1477-3163
2025; Vol 24: Issue 6s, https://carcinogenesis.com/

Osteopathy in Supportive Oncology Care: A Narrative Review of Mechanisms and Potential Roles

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ABSTRACT

Cancer is one of the leading causes of morbidity and mortality in the world as patients often face physical, emotional, and psychological problems during and after treatment. Oncology supportive care is supposed to improve the quality of life, reduce symptoms, and supplement traditional cancer treatments. Osteopathy, a type of manual therapy that relies on the concepts of body unity, self-healing, and structure-function interaction, has become a promising treatment method as a form of complementary medicine in integrative oncology. This narrative review investigates the action and possible functioning of osteopathy in supportive cancer care by integrating the evidence provided by recent research and theoretical models.

The review identifies some important biological processes by which the application of Osteopathic Manipulative Treatment (OMT) can be useful to oncology patients, such as the improvement of lymphatic drainage, the work of the autonomic nervous system, the decrease in musculoskeletal tension, and the performance of immune and neuroendocrine systems. Psychological processes, including stress reduction, anxiety and depression alleviation, and improvement of the therapeutic alliance between the patient and the practitioner, were also determined. There is some evidence that osteopathy may help manage such symptoms of cancer, such as pain, fatigue, sleep disturbances, and lack of mobility, to improve the overall well-being of patients.

Despite the possibility of these benefits, the current evidence is still short of small samples and the absence of methodological homogeneity. The safety, efficacy, and integration strategies that are to be implemented in the oncology care team would have to be established through clinical trials and standardized treatment procedures. In this review, it has been established that osteopathy holds great potential as a patient-centred, non-invasive supportive therapy that offers holistic care and improves the quality of life of cancer patients.

Keywords: *Osteopathy, Supportive oncology care, Cancer management, Pain reduction, Quality of life, Manual therapy, Mechanisms of action, Integrative medicine, Palliative care, Symptom management*

How to Cite: Siddhant Nikam, Nimisha Shankar Narayan., (2025) Osteopathy in Supportive Oncology Care: A Narrative Review of Mechanisms and Potential Roles, *Journal of Carcinogenesis*, *Vol.24*, *No.6s*, 458-467.

1. INTRODUCTION

Cancer remains a leading cause of morbidity and mortality worldwide, with over 10 million deaths annually, and incidence continues to rise due to aging populations and lifestyle-related risk factors.[2] Beyond the direct burden of the disease, patients often experience persistent pain, fatigue, sleep disturbances, psychological distress, and reduced physical functioning, both during active treatment and survivorship [1]. These multidimensional challenges highlight the critical role of supportive oncology care, which aims to improve quality of life, alleviate symptoms, and promote overall well-being across the cancer trajectory.[3]

Conventional cancer management remains anchored in surgery, chemotherapy, radiotherapy, and immunotherapy. While these approaches are effective for disease control, they are frequently accompanied by disabling side effects that compromise patients' physical, emotional, and social functioning [4]. Consequently, there has been growing interest in complementary and integrative medicine strategies that adopt a patient-centered, holistic perspective and can be safely combined with standard oncology care.[1]

Osteopathy, a manual therapy grounded in the principles of body unity, self-healing capacity, and the interrelationship between structure and function, has gained increasing attention in this context. OMT employs hands-on techniques to support physiological processes, reduce symptom burden, and improve overall well-being without aiming to cure the underlying malignancy. Preliminary evidence suggests that OMT may relieve cancer-related pain, improve

musculoskeletal function, reduce fatigue, and alleviate psychological distress such as anxiety and depression.[1]

Despite these promising findings, the integration of osteopathy into oncology remains limited due to methodological heterogeneity, small sample sizes, and a lack of standardized treatment protocols. Further investigation into both the biological mechanisms (e.g., modulation of autonomic activity, lymphatic drainage, and immune function) and psychological pathways (e.g., stress reduction, therapeutic alliance) is needed to clarify osteopathy's role in supportive cancer care.

The objective of this narrative review is therefore to critically examine the biological and psychological mechanisms underlying osteopathic interventions in oncology, synthesize current clinical evidence, and identify research gaps and integration strategies to clarify and advance osteopathy's role within supportive oncology care.

Methodology

This review was carried out through the narrative review methodology since the methodological approach is effective in synthesizing and critically examining evidence present in different sources, and also getting a general overview of the subject. In contrast with systematic ones, narrative reviews allow researchers to expand the scope of the literature, including theoretical concepts, clinical evidence, and experience to generate meaningful knowledge on complex healthcare issues, such as whether to include osteopathy in supportive oncology care.[5]

Search Strategy

A thorough literature review was conducted in several electronic databases, such as PubMed, Scopus, MEDLINE Web of Science, and Google Scholar. The search was limited in terms of studies published since 2010 to March 2025 in order to capture the current developments in the field. The keywords and Boolean operators were as follows: "osteopathy" OR "osteopathic manipulative treatment" and "oncology" OR "cancer and supportive care" OR "palliative care" OR "symptom management". Other keywords that were added to narrow the search were pain, fatigue, quality of life, and manual therapy. The relevant articles were manually screened in terms of the identification of additional studies in reference lists.[6]

Inclusion and Exclusion Criteria

The studies were added to the inclusion list provided that they were peer-reviewed, published in English, and were dedicated to the role of osteopathy or osteopathic techniques in the setting of oncology or supportive care. Both systems reviews, case studies, observational studies, and clinical trials were considered. The exclusion criteria comprised non-peer-reviewed articles, articles that were not oncology-related, publications that dealt exclusively with non-osteopathic complementary remedies, and articles that had no full texts.

Data Extraction and Synthesis

The first search provided 1,276 articles. Independent screening of titles and abstracts was done to determine relevance, and finally, a review of potentially eligible studies was done in full text. Information was abstracted on study design, population, interventions, outcomes, and significant findings. The thematic analysis of the extracted information was performed and divided into two broad categories which are (1) biological and psychological mechanisms of osteopathy and (2) possible roles of osteopathy in supportive oncology care. Results were summarized in the form of a narrative in order to bring out the present evidence, gaps in research, and suggest future ways of integrating osteopathy into holistic cancer treatment.[7]

Supportive Oncology Care Context: Osteopathy and Supportive Oncology Care

The treatment of cancer usually requires aggressive medical procedures like surgery, chemotherapy, radiotherapy, immunotherapy, and targeted drug therapies that are necessary in managing the progression of the disease and the increase in survival rates. Nevertheless, such treatments are often coupled with a series of disabling side effects such as pain, fatigue, nausea, neuropathy, psychological stress, sleep disturbances, and loss of mobility. These complications may greatly reduce the quality of life (QoL) of patients and make it hard to act or remain involved in the treatment process on a daily level. With the increasing rates of survival, the necessity of supportive oncology care has been growing to deal with the physical, emotional, and social aspects of cancer existence. Supportive care aims at maximizing comfort, controlling symptoms, and improving overall well-being during the cancer experience, both during the pre-survivorship phase (diagnosis to survivorship) and during the end-of-life stage.[8]

Needs at Oncology Care

Pain treatment and fatigue alleviation is one of the most urgent supportive care requirements. The pain may be caused by the cancer itself, destruction of tissues during its treatment, or other secondary effects like lymphedema or bone metastases. Likewise, cancer-related fatigue is also among the most prevalent and uncomfortable symptoms, and occurs in as many as 90 percent of patients throughout active treatment. The occurrence of psychological issues, such as stress,

anxiety, and depression, is also very common and may cause the aggravation of physical symptoms, in turn, developing a cycle of misery, which affects the recovery and compliance with treatment regimes. These intricate, interdependent symptoms are multidimensional and holistic, and traditionally addressing them is insufficient since these symptoms are multidimensional.[9]

Existing Traditional Methodologies

The conventional supportive care depends on the use of pharmacological interventions such as analgesics to treat pain, antiemetics to treat nausea, and sleeping pills or antidepressants to treat mental symptoms. Although such interventions are frequently required, they can bring other side effects or result in dependency. Non-pharmacological interventions, which include physiotherapy, psychological counseling, and nutritional support, are increasingly being integrated, although they usually tend to be fragmented in cancer care systems.

Integration of Osteopathy

Osteopathy is a non-invasive, complementary therapy that has the potential to be used to supplement the supportive care of conventional oncology therapy. According to its fundamental values of treating the body as a whole and assisting in self-healing processes, the osteopathic manipulative treatment (OMT) aims at improving structural and functional balance. Osteopathy is not used to cure cancer; instead, secondary symptoms, pain during treatment, and the adaptive power of the body are improved to support cancer therapy in cancer care.[10]

An illustration is that the mild osteopathic manipulations would aid in improving lymphatic flow, which is specifically useful to patients with lymphedema after surgery or radiotherapy. Cranial osteopathy can help relaxation and anxiety reduction, whereas soft tissue methods can take off musculoskeletal tension as a result of a lengthy period of immobility or post-surgery postural changes. A case study posted in the Journal of Bodywork and Movement Therapies showed that OMT decreased swelling in the upper limbs and improved the functions of the arm of a breast cancer survivor with chronic lymphedema. On the same note, the clinical reports have revealed that pain management, mobility, and emotional well-being have improved when osteopathy is incorporated in the palliative care programs.[11]

The need to integrate osteopathy into oncology mandates close cooperation among the osteopaths, oncologists, nurses, and physiotherapists to ensure safety, particularly for patients with weak bones or metastatic cancer. Osteopathy may have a critical role in the overall management of cancer, by supporting the unmet needs and empowering the patients with personalized, hands-on therapy, complementary to medical care, and improving their overall quality of life.[12]

Action Mechanisms of Osteopathy

Osteopathy has enormous advantages for cancer patients along biological and psychological mechanisms. Such mechanisms deserve to be understood to determine their role in supporting care and safe incorporation into the oncology treatment regimens. The mechanisms may be divided into biological, psychological, and emotional, and symptom-specific effects.

Current Clinical Studies

The analyses of the influences of osteopathy on cancer patients have been primarily done to determine the impacts of the treatment on the levels of pain, fatigue, psychological well-being, mobility, and the quality of life (QoL). This has led to a growing body of literature that osteopathic manipulative treatment (OMT) can result in meaningful symptomatic effects when coupled with conventional cancer treatment.

A study demonstrated one of the largest randomized controlled trials (RCTs) to investigate the effects of OMT on patients undergoing chemotherapy in the context of breast cancer. The study made a significant breakthrough in the shoulder range and reduction in the level of pain, which satisfied particularly the patients who were limited in the post-surgery period due to the mastectomy or removal of lymph nodes. The findings exposed the effectiveness of osteopathy in managing musculoskeletal impairments, which are commonly experienced by people who have gone through cancer.[22]

In another study, they targeted the patients within the palliative care setting who had advanced cancer. The methods of gentle cranial and soft tissue were employed, and the impact on anxiety, emotional distress, and fatigue was great. The patients also reported improved quality of sleep and experienced more feelings of relaxation, which proved the holistic benefits of osteopathy that were not concentrated on the recovery of physical symptoms.[23]

In another case study conducted in the Journal of Bodywork and Movement Therapies (2021), osteopathy was also found to be effective in the treatment of lymphedema of a breast cancer patient. The use of gentle lymphatic drainage procedures reduced the swelling of the upper limbs and also improved the functioning of the limbs, and the patient was in a position to become independent in daily activities. This might mean that osteopathy could be a safe and acceptable addition in the treatment of complications, such as fluid retention and hardened scar tissue.

Furthermore, [24] examined the effects of OMT on fatigue as a result of cancer in radiotherapy cancer patients in a feasibility study. The respondents who received OMT reported a substantial reduction in fatigue score over the control group; in addition, they reported improved emotional well-being and quality of life indicators. The findings of the research reveal that there is a potential for osteopathy in the treatment of one of the most persistent and painful symptoms among cancer patients.

All these articles indicate that osteopathy may be employed to treat multidimensional symptoms, with superior physical and mental outcomes. However, most of the studies have been conducted on small populations of patients, and this implies that they can only be generalized on a small scale, and it is significant that large-scale RCTs be conducted to prove such positive results.[25]

Effectiveness Comparison

Osteopathy is usually considered to be a parallel with other complementary and integrative medicine practices such as massage therapy, acupuncture, and physiotherapy used in oncology practices. Osteopathy Massage treatment, like osteopathy, is physically and psychologically comforting and soothing through touch. However, despite the primary relaxation of the superficial muscles being the primary goal of massage, osteopathy is more of a structural, holistic treatment, and it acts on the deeper physiological systems and involves the lymphatic circulation, joint mobility, and the regulation of the nervous system.

Acupuncture is also found to be effective in the treatment of cancer, particularly in managing nausea and pain caused by cancer chemotherapy. Even though osteopathy and acupuncture are neuromodulatory, the strength of osteopathy is that it addresses postural imbalance and manages musculoskeletal complications, and this is improved by manual therapy.[26] Osteopathy provides more practical and customized treatment, which is focused on rehabilitation and exercise, and is suitable for sick cancer patients who may not be in a position to go through intensive exercises. The studies show that osteopathy could be combined with physiotherapy, and they could be more effective, particularly in treating lymphedema and post-surgery pain.

Overall, other complementary therapies have been widely used in the sphere of cancer treatment, yet osteopathy has some advantages that have never been used before, particularly structural, functional, and psychological treatment. Further comparative studies are needed to put osteopathy under the integrative oncology practice umbrella.[27]

There are some evidence constraints

The current body of evidence of osteopathy in cancer treatment is, however, modest and scattered despite the growing appetite. Many studies are small-scale pilot studies or case series that have little statistical power and generalizability. One can illustrate this assumption by the following example: the typical sample size adopted in most RCTs is 20-80 subjects, and it is difficult to draw any hard conclusions.

Another major weakness is the lack of standardized treatment protocols. Osteopathic activities vary greatly across practitioners and settings, such as variation in technique, length of session, and frequency. This contradiction complicates the comparison of the outcomes of different studies and creates evidence-based guidelines.

Other methodological issues that remain include the absence of blinding, inaccurate outcome measures, and the absence of follow-up. Various research works rely on subjective self-reported data, such as pain and fatigue scores, and there is no use of objective physiological data.

Additionally, the geography of research is imbalanced since most of the studies are situated in Europe, and the least contribution is made by others, particularly the low and middle-income countries, where the demand for supportive care is the highest.

In order to address these shortcomings, multicenter RCTs, which have standardized procedures, should be well-designed. The activities will be significant to show the appropriateness of osteopathy in the treatment of oncology and integrating it into the main supportive care programs.[28]

Issues and Moral Issues

Challenges:

The first concern is that the training and certification of the osteopaths to work with oncology patients is not standardized. Osteopaths might lack specific training of cancer-related complications, bone metastases, or lymphatic disorders, as compared to physiotherapists or nurses, and this is hazardous.

Moreover, the possible usefulness of osteopathy in cancer treatment is unknown to both the population and the clinicians. The majority of oncological teams are not used to the breadth of the osteopathic practice, resulting in the lack of effectiveness of referral patterns and a fragmented care delivery process. The collaboration, education, and trust in the development of multidisciplinary teams that involve the use of osteopathy must be collaborative.[29]

Ethical Considerations:

The safety factor is an important issue, especially for the already diseased and lymphedemic patients with weak bones. It is necessary to modify approaches, and Osteopaths must be sensitive to avoid hurting a patient through using a non-invasive approach, which is non-violent and sensitive to patient response.

Informed consent is needed to ensure that the patient becomes aware that osteopathy is neither a treatment nor a complementary one. The practitioners are also expected to uphold the autonomy of patients by involving people in evidence-based shared decision-making and openness to evidence-based practice.

With these issues and moral arguments, osteopathy will be capable of safely entering oncology care and supporting patients holistically and comprehensively.

2. RESULTS

Osteopathy integration into the supportive therapy of the cancer condition has tremendous potential, and further research is required to establish its clinical efficacy and safety. Creation of high-quality evidence through building large-scale randomized controlled trials (RCTs) is just one of such priorities. The literature research has its limitations of small sample sizes and varied methods; hence, it cannot be concluded easily from the results. RCTs are supposed to cover more than just the different cancer populations, and subjective (e.g., pain and fatigue) and objective (e.g., immune and endocrine responses) physiological outcomes are to be measured.[30]

The other urgent need is the setting of standardized protocols with special regard to the oncology patients. They should contain the rate of such sessions, the most adequate procedures for individuals with such conditions as lymphedema or bone metastases, and the prescribed safety measures. Not only will the standardization result in improved patient outcomes, but also the practitioners will be trained, and the outcomes of the research will be compared.[31]

In addition, integration frameworks of the hospitals, cancer centers, and palliative care units should be created. These models should be used to facilitate interdisciplinary collaboration in which the osteopaths would collaborate with oncologists, physiotherapists, nurses, and psychologists to provide a comprehensive and highly coordinated care.[36]

Finally, the mechanistic research should be conducted to explore the effects of osteopathy on the biological processes, including the immunity regulation, the autonomic nervous system regulation, and stress hormone pathways. The understanding of these processes will provide osteopathy with a scientific foundation in cancer treatment and render it acceptable in evidence-based integrative oncology. By answering these research priorities, osteopathy will become a legitimate, non-harmful, and easily accessible supportive treatment for cancer patients.[32]

Table 1: Mechanisms of Osteopathy Relevant to Oncology Supportive Care

Mechanism	Description	Potential Role in Oncology Care
Manual Therapy	Soft tissue manipulation, myofascial release, joint mobilization	Reduce musculoskeletal pain, improve mobility, and improve comfort
Visceral Osteopathy	Techniques targeting internal organs and their fascial connections	Support organ function, reduce gastrointestinal discomfort
Cranial Osteopathy	Gentle manipulation of cranial bones and sacrum	Alleviate headache, stress, and improve relaxation and sleep
Lymphatic Techniques	Facilitation of lymphatic flow and drainage	Reduce edema, improve immune function, and support post-surgical recovery
Neuro-Musculoskeletal Modulation	Influence on the nervous system via musculoskeletal adjustments	Help manage neuropathic pain, fatigue, and functional limitations

Source: (10)

Interpretation

This table describes the various osteopathic actions that can be implemented on oncology patients and how they can be

used to support the management of symptoms. OMT and visceral osteopathy are directed to treat musculoskeletal and gastrointestinal pain, and cranial osteopathy is directed to the relaxation and the alleviation of stress symptoms, such as headaches and sleep disorders. Lymphatic methods are effective in the elimination of edema and improvement in post-surgical recovery, and the neuro-musculoskeletal modulation assists in the regulation of the nervous system to alleviate neuropathic pain and fatigue. Combined, these processes point to the possibility of osteopathy to improve standard cancer care due to its ability to eliminate functional limitations, improve comfort, and promote the physical and emotional well-being of patients, in general.

Table 2: Research Evidence and Gaps in Osteopathy for Oncology Supportive Care

Research Area	Current Evidence	Gaps / Limitations	Future Directions
Pain Management	Case reports and small trials show a reduction in musculoskeletal pain	Limited large-scale RCTs, heterogeneous methods	Multi-center RCTs, standardized protocols
Lymphatic & Edema Control	Observational studies indicate improved lymph drainage	Small sample sizes, mostly pilot studies	Larger trials, objective measurement of edema
Quality of Life & Psychological Wellbeing	Positive trends in anxiety, stress, and sleep improvements	Subjective measures dominate, with limited long-term follow-up	Standardized QOL assessments, longitudinal studies
Safety and Adverse Events	Generally safe with minor transient side effects	Lack of systematic safety reporting	Safety registries and reporting frameworks
Integration into Oncology Care	Some hospitals include osteopathy in integrative care programs	Limited awareness and guideline inclusion	Policy development, training, and clinician education.

Source: (11)

Interpretation

This table indicates the present situation in the research on the role of osteopathy in oncology supportive care. There is some evidence of pain reduction, lymphatic drainage, and psychological well-being; however, the results are largely based on small-scale studies and case reports, which cannot be generalized. Although the aspect of safety seems satisfactory, the adverse events are not systematically reported. The uptake of oncology is still variable, as there are some institutions that incorporate osteopathy, yet there is a general lack of awareness and guidelines. The table highlights that there is an urgent necessity to conduct strong, multi-centre randomised controlled trials (RCTs), standardised outcome measures, long-term follow-up, and structured safety registries to tighten the evidence base and give a direction to effective integration.

Table 3: Potential Benefits of Osteopathy in Supportive Oncology Care

Benefit	Evidence/Observation	Patient Impact
Pain Reduction	Clinical observations of improved musculoskeletal comfort	Improved daily functioning, reduced opioid dependency
Improved Mobility & Function	Reports of increased range of motion and decreased stiffness	Better independence and quality of life
Stress and Anxiety Management	Techniques promoting relaxation and parasympathetic activity	Reduced anxiety, improved sleep, and emotional well-being
Edema and Circulation Support	Lymphatic techniques improve fluid drainage and reduce swelling	Relief from post-surgical or treatment-related edema
Overall Quality of Life	Combined osteopathic interventions positively affect physical and mental health	Better adaptation to cancer treatment and recovery outcomes

Source: (17)

Interpretation

The given table provides an overview of the benefits that osteopathy has on cancer patients. There is an indication of improvement in musculoskeletal pain, mobility, and functioning, which has led to less dependence on opioids and a higher ability to stand. It is through the relaxation techniques that stress and anxiety management is assisted and consequently lead to improved emotional wellbeing and sleep quality. Lymphatic techniques help in circulation and edema elimination, especially after surgery. All of these results lead to the overall improvement in the quality of life, making the patients

more likely to assume the burden of cancer treatment. Although they rely on the results of observations, these data show good, encouraging signs of supportive functions of osteopathy in the treatment of cancer.

Table 4: Patient Populations Benefiting from Osteopathy in Oncology Care

Patient Group	Cancer Type / Treatment Context	Reported Benefits	Notes
Breast Cancer Patients	Post-mastectomy, chemotherapy, radiation	Reduced lymphedema, improved shoulder mobility, and stress reduction	Complementary to physiotherapy and lymphatic drainage
Prostate Cancer Patients	Post-prostatectomy, hormone therapy	Improved pelvic floor function, reduced pain	Supports rehabilitation and quality of life
Colorectal Cancer Patients	Surgery and chemotherapy	Reduced abdominal discomfort, improved digestion	Visceral techniques are particularly beneficial
Pediatric Oncology Patients	Various cancers during chemotherapy	Stress and anxiety management, gentle pain relief	Techniques adapted for children's safety
Palliative Care Patients	Advanced cancer, end-of-life care	Pain relief, relaxation, improved sleep	Focus on comfort and holistic support

Source: (21).

Interpretation

This table outlines the various groups of cancer patients who can be served under osteopathic care. The patients with breast cancer enjoy improved mobility and decreased lymphedema, whereas the prostate cancer patients enjoy pelvic floor rehabilitation and pain management. Visceral methods provide relief to colorectal cancer patients via alleviating abdominal discomfort, and pediatric cancer patients are provided relief in stress management and mild symptom easing during chemotherapy. Osteopathy in palliative care focuses on comfort, relaxation, and pain alleviation, which is in line with holistic support. On the whole, the table demonstrates the versatility of osteopathy to various cancer settings, which supports the fact that it is a complementary treatment that adapts to various treatment phases and the needs of a patient.

3. DISCUSSION

Biological Mechanisms

The body's structural and functional balance is the main concern of Osteopathy, and it can significantly influence the various physiological systems that are impacted by cancer and treatment.[13]

Musculoskeletal System

The use of surgery, radiotherapy, and chemotherapy as a form of cancer treatment is associated with musculoskeletal problems and complications, such as stiffness, scar tissue formation, and postural imbalances. Indicatively, patients of breast cancer can have impaired movement of the shoulders and pain in the shoulders after mastectomy or removal of lymph nodes. In the absence of side effects, OMT applies gentle therapies like soft tissue manipulation, myofascial release, and joint mobilization to decrease muscle tension, improve joint mobility, and get back on track. A clinical trial conducted by a study showed that OMT can increase functional mobility and decrease the level of pain in cancer survivors with post-treatment musculoskeletal disorders.[14] These advances not only contribute to physical comfort but also assist the patients in resuming normal lives.[15]

The Lymphatic System

The lymphatic system is very important to the immune defense as well as fluid balance, and is very vulnerable to cancer treatments. Lymphedema, which is one of the side effects of the removal of lymph nodes or radiotherapy, leads to swelling and soreness of the limbs concerned. Osteopathic methods, especially those that focus on improving lymphatic drainage, have been found to create fluid circulation, minimize swelling, and promote healing of tissues. Studies have shown that mild rhythm techniques can improve the lymphatic circulation and venous flow, thereby reducing inflammation and infection. Also, patients can have better circulation, and it may promote overall recovery by improving the delivery of oxygen and nutrients to tissues.[16]

Neuroendocrine System

Cancer patients are prone to stress and chronic inflammation, which may adversely affect the treatment results and the

quality of life. It has been associated with the functioning of the autonomic nervous system (ANS) and has been shown to have a positive effect in balancing the sympathetic and parasympathetic responses. Osteopathic interventions can lower the stress hormone levels in the body, including cortisol, which helps in relaxation and emotional control as it promotes parasympathetic action. In addition, the study also reveals that the anti-inflammatory effects of OMT may be delivered by reducing pro-inflammatory cytokines and enhancing immune functions. The example of the study conducted by Amoroso was capable of demonstrating that osteopathic interventions resulted in increased immune markers and heart rate variability, and no tissue effects visible in the area were reported.[17]

A combination of all these biological processes leads to a positive physiological environment, which helps in relieving symptoms, enhancing tolerance to the treatment process, and improving the general well-being of cancer patients. Despite the need to conduct more large-scale clinical trials, there has been evidence that osteopathy can be adopted as a safe alternative to conventional cancer treatment.[18]

Psychological/Emotional Mechanisms

The emotional effect of cancer is highly pronounced, and the majority of patients experience anxiety, depression, and emotional disturbance throughout the treatment. The problem of these challenges is addressed through the practice of osteopathy, which is patient-centred and hands-on, through encouraging the healing process of the body and the heart.
OMT is a relaxing sensory experience and will result in a reduction of stress and anxiety, activating the parasympathetic nervous system and promoting relaxation. And there is light contact during OMT. This mechanism is particularly important to patients undergoing intensive treatments because it averts hypervigilance and stress, which are commonly accompanied by a cancer diagnosis. As a study revealed, osteopathic treatments described a considerable level of anxiety reduction and improved patients with cancer regarding body satisfaction.[19]

Moreover, osteopathy improves emotional health since it improves the therapeutic relationship between the practitioner and the patient. The personal, loving care of osteopaths is the offer of a safe environment where patients can express their concerns and feel accepted. The result of such a relationship is psychosocial resilience, which is vital in coping of the emotional burden of cancer treatments. These good effects of osteopathy include mood relief and providing comfort to a palliative care environment, even in cases when a disease cannot be cured.

In addition, the mind-body connection is another important factor in health outcomes. The method of osteopathy toward holistic treatment is physical and psychological, which allows the patient to have better control over the healing process. Such empowerment can reduce the feeling of helplessness and generally advance the lifestyle.[20]

Pain and Symptom Modulation

Pain, fatigue, and sleeping disruptions are some of the most common and disabling symptoms that cancer patients experience. Osteopathy helps in treating such issues through a process of both biological and neurological processes. The musculoskeletal tension can be subjected to light forms of manipulation to relieve local pains that have been occasioned by surgery, tumour growth, or side effects of treatment.

OMT also manipulates the central pain processing pathways, which can help to transmit the pain perception through activation of downward inhibition loops within the nervous system. This is particularly helpful in the non-responsive to pharmacological neuropathic pain.

In addition to pain relief, osteopathy is applied to reduce fatigue among cancer patients by improving oxygenation, lymphatic circulation, and autonomic balance. Sleep is improved by the increased relaxation and the decreased levels of stress hormones that enable patients to have more relaxed sleep, which plays an important role in recovery. These effects have a vital role to play in the overall management of the symptoms in the supportive oncology care by osteopathy.[21]

4. CONCLUSION

Osteopathy is an all-encompassing, patient-centered approach of supportive oncology treatment that incorporates the increase of physical comfort, emotional wellness, and life quality. Various mechanisms of action are involved in treating many of the multidimensional problems of cancer patients in osteopathy, including the biological mechanisms (through better lymphatic drainage, better musculoskeletal functions, immune and stress-response modulation), and psychological mechanisms (reduced anxiety and better therapeutic relationships).[35]

Certain emerging clinical research suggests that OMT could be applied in the treatment of the most common manifestations of cancer, including pain, fatigue, and sleep disorders, and the support of emotional resilience. However, the limited sample sizes, non-standardized procedures, and methodological differences restrict the general application of existing studies because they turn out to be a hindrance to their internalization [34]

Although osteopathy, as a complementary approach within oncology, presents certain limitations, its potential is evident. With further research, standardized protocols, and close collaboration between osteopaths and oncologists, it could become a vital component of comprehensive cancer care. By ensuring patient safety, respecting autonomy, and maintaining an evidence-based foundation, osteopathy offers the possibility of a more holistic and patient-centered model of oncology care that improves quality of life.[33]

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