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Bioethical and Medical-Legal Challenges in Multimodal Cancer Treatment: Addressing Misinformation and Informal, Unregistered Advice

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ABSTRACT

This article addresses the bioethical and medico-legal challenges in the multimodal treatment of cancer, emphasizing the growing gap between therapeutic advances and their clinical implementation. Many patients remain uninformed or lack access to advanced therapies, such as immunotherapy or targeted treatments, due to outdated practices in their healthcare centers. This situation often leads to frustration, as patients feel that not all potential treatment options have been explored.

The right of patients to receive clear, informed, and transparent guidance on their treatment is highlighted, as well as the necessity for proper documentation of medical decisions to ensure traceability and protect both the patient and the medical professionals involved. The lack of information or bias directly impacts patient autonomy, limiting their ability to make well-founded decisions.

The article also highlights the significant benefits of multimodal therapies, such as cytoreductive surgery and personalized immunotherapy, which have been shown to improve outcomes and quality of life in advanced cancer cases. It calls for treating physicians to act as guides or, when necessary, defer to specialized centers with proven expertise, thus avoiding limiting patients to conventional protocols.

The need for a multidisciplinary approach is clear, with a committee of clinical oncologists, radiation-oncologists, surgical oncologists, and pathologists, alongside immuno- oncopathology specialists, being essential to the development of personalized, biologically driven therapies. Advances in cancer treatment confirm the importance of this integrated approach, particularly through collaboration between pathologists and clinical oncologists who have specialized in biotechnology and precision medicine.

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Introduction

Increasingly, and due to a multifactorial context that would be the subject of another subsequent or complementary analysis, cancer patients face a frustrating situation when they are left without treatment in the short or long term or are told that the only option left is management of their symptoms [1]. Hearing that they do not qualify for treatment due to the advanced state of their cancer or other factors quickly leads them to palliative care, with the indication to "spend the remaining time with the family" [2]. However, this leaves the patient with the feeling that not all the alternatives have been explored and without a clear explanation or adequate support.

The cancer patient has the fundamental right to ask about other therapies that have not been offered at their local care center, either because they are not available or because they have not been presented by their medical team [3]. The search for advanced options, such as immunotherapy or biological treatments, is completely legitimate and an essential act of empathy. In this situation, the doctor has the opportunity and responsibility to advise and guide the patient, offering guidance to access these therapies or explaining in a reasoned manner if they are not viable for their particular case. This requires up-to-date knowledge and a track record in what they are responding to [4].

A quick, minimalist response such as "not applicable to your cancer" or "does not qualify" is not sufficient. The physician must provide detailed, up-to-date guidance or, if he or she lacks knowledge of new therapies, acknowledge their limitations and refer the patient to a trained specialist. Ignoring such questions or dismissing them without sound grounds compromises medical ethics and causes the patient to miss crucial opportunities to improve his or her prognosis [5].

Furthermore, this counselling process must be recorded in the patient's medical record. Any recommendation, whether to support

or advise against a treatment, must be documented to protect both the patient and the doctor, ensuring responsible transparency and traceability in clinical decisions.

When a patient does their own research and asks about new therapeutic options, such as target therapy , immunotherapy or emerging technologies, they are demonstrating their desire to explore all possible avenues to improve their prognosis. The physician retains an obligation to offer answers based on the best available information or, if they are not sufficiently trained, to refer the patient to a specialist who can guide them appropriately. The key is to ensure that decisions are made in an informed manner, with adequate clinical support and always considering the rights and preferences of the patient. In current times, it is not always possible for a single professional to be aware of all the therapies available for all types of cancer and to have experience in their daily use. This is understandable, and the patient should take this scenario into account.

The Growing Gap in the Application of Advanced Therapies in Cancer Treatment and the Misinformation Facing Patients

In recent years, cancer treatment has experienced remarkable advances, highlighting therapies such as immunotherapy, targeted therapies and prophylactic surgery for patients with high genetic risk. However, the implementation of these advances in conventional clinical practice has been slow, which has created a significant gap between specialized centers and those that still rely on traditional treatments, such as standard chemotherapy and radiotherapy [6]. This difference in the adoption of innovative therapies seriously affects patients, who not only face access barriers, but also suffer from misinformation regarding the most advanced options available, which impacts their prognosis and quality of life.

The gap between scientific advances and their clinical application is due to several factors. First, new treatments must undergo long clinical trial processes and be approved by regulatory bodies such as the FDA or EMA. Only then can they be included in the clinical guidelines of health systems [7]. This process can take several years, leaving patients in conventional centers with fewer therapeutic options. In addition, advanced therapies, such as immunotherapy, are often expensive, even more so in their pharmacological variant, which must resolve the huge costs and deadlines for health registrations, which limits their availability in countries with fewer resources or in public health systems, where costs are a major barrier to their implementation [8].

Misinformation is another critical effect of this gap. Many patients do their own research and discover innovative therapies that have not been offered to them by their doctors, which generates mistrust and frustration. This lack of adequate information especially affects patients in conventional centers, whose doctors may not be up to date or have access to the most advanced therapies [9]. In some cases, the lack of training or updating on new treatments leads doctors not to refer or guide patients to consider options such as immunotherapy in its various validated forms or biological therapies, since not having this knowledge does not make them experimental or risky [10].

The consequences of not accessing advanced therapies can be devastating. Studies have shown that combinations of immunotherapy and cytoreductive surgery can significantly improve survival and quality of life in patients with advanced cancer [11]. However, when patients are not informed about these options, or worse, are denied or contradicted about the possibility of accessing them, they miss key opportunities to improve their prognosis. In some cases, the lack of adequate guidance has led patients to seek treatments outside the conventional health system, exposing themselves to unregulated pseudotherapies, with significant risks to their health and safety [12].

To close this gap between scientific advances and conventional cancer care, concrete actions are required. One of the most effective solutions is the creation of updated virtual guides that inform physicians about the latest advances in cancer therapies. An example of this approach is the website of international scientific societies of molecular oncology and precision oncology that provides updated information to health professionals to guide their patients to the most recent and effective options [13]. In addition, it is essential that health systems value the trajectory and experience of professionals, scientists and centers specialized in translational research, which would facilitate the trust and timely access of patients to advanced therapies.

The Patient's Right to Transparency in Medical Decisions Regarding Cancer Treatment

One of the major complaints of cancer patients is the lack of clear documentation regarding the decisions made during their treatment. It is increasingly common for patients to be ruled out for certain treatments, such as cytoreductive surgery , radiotherapy, choice of some type of advanced immunotherapy or targeted therapy, for patients with metastatic cancer without a clear record of the reasons justifying this decision [14]. The omission of this documentation not only affects the patient's confidence, but limits their ability to evaluate other options or seek a second medical opinion and distances themselves from orthodox medical practice. In cancer treatment, clear justification of why a treatment is rejected is as important as the recommendation to apply it. This lack of registration can be considered an ethical omission, since the patient is left uninformed about the reasons behind key decisions in their treatment [15].

For example, in many cases, cancer patients must complete cycles of chemotherapy before being allowed to access other therapeutic options, such as surgery or radiotherapy. However, severe adverse effects of chemotherapy, such as toxicity or intolerance, often prevent patients from completing the recommended cycles. This leaves them without the possibility of accessing other treatments that, if considered from a broader perspective, could have been beneficial in improving their prognosis [16]. This rigid approach to chemotherapy can be counterproductive, as it blocks other therapeutic options and limits the patient's possibilities.

The Value and Duty of Proper Recordkeeping of Medical Care

Failure to properly record not only affects the patient from a medical perspective, but may also have legal and ethical implications. Informed consent regulations require that patients receive all relevant information about their treatment, including the reasons for choosing or rejecting certain therapies. This is essential for the patient to be able to exercise their right to autonomy in decision-making [17]. If the physician does not adequately document his recommendation or indication to abstain from certain treatments, he is depriving the patient of a critical part of his right to information.

Furthermore, medical decisions must be based on the most up-to-date scientific evidence and reflect the best interest of the patient. Evidence-based medicine requires that physicians stay

informed about advances in cancer therapies and adapt their recommendations to the evolution of treatments. Therefore, it may be incomprehensible to the patient that their physician rejects radiotherapy or surgery, without taking into account real selective or specific benefits that are of high interest to the patient. Cytoreductive surgery , for example, has been shown to be effective in certain cases of metastatic cancer when combined with targeted therapies or immunotherapy, an approach that was not available for decades, but is today a valid and proven option [18].

The Impact on the Patient

When a patient is met with brief or evasive answers, such as "you do not qualify for that treatment" or "your cancer is not suitable for this therapy," without adequate explanation, mistrust and a feeling of helplessness are generated. Furthermore, these answers without written justification compromise the doctor-patient relationship and can have long-term consequences on the patient's perception of the health system. If the patient feels that he or she has not been given the opportunity to explore all therapeutic options, the patient's right to transparency in medical decision-making is not only an ethical imperative, but also a legal one [19]. Adequate documentation of therapeutic decisions not only protects the physician from potential legal liability, but also ensures that the patient can make fully informed decisions, thereby improving his or her prognosis and quality of life.

Proper documentation of therapeutic decisions not only protects the physician from potential legal liability, but also ensures that the patient can make fully informed decisions, thereby improving his or her prognosis and quality of life. However, professional adherence should not become thoughtless or obsequious to oncological guidelines, protocols or standards that have been in force for decades, because although at the time they protected the physician from any questioning about the application or not of a therapy, today they can turn against him or her if these standards have become outdated or inappropriate in specific clinical situations.

In a field as dynamic as cancer treatment, where advanced and personalized therapies are constantly being developed, applying general criteria based on old protocols can be counterproductive. For example, a rigid approach that sine qua non prioritizes standard chemotherapy before considering other options such as surgery, radiotherapy, immunotherapy or targeted therapies may not be the most suitable for certain types of cancer or patient situation. In this context, patients might argue that their particular condition required a more specific and personalized approach, which did not conform to traditional standards [20].

Protocols established decades ago may have been appropriate for the resources and knowledge available at that time. However, with current advances in personalized medicine, it is understandable that patients expect an analysis on an individual basis and with a more specific perspective. In some cases, blindly following an outdated protocol, even if agreed upon, may be perceived by the patient as negligence or lack of updating [21]. The excessively standardized application of these protocols may deprive the patient of therapeutic options that could improve their prognosis, especially in advanced cases or with particular characteristics that do not fit within the general criteria [22].

The ability to update and personalize treatments is key in modern medicine. Failure to adequately document the reasons for pursuing or rejecting advanced treatments risks having those decisions questioned as sloppy, particularly in an era where patients have access to more medical information and emerging therapies [23].

Patient Vulnerability to Misinformation: Consequences for Prognosis

The impact of any misinformation experienced by a cancer patient is profound and can be devastating for their prognosis. Access to advanced therapies such as targeted therapies, immunotherapies, advanced radiotherapies, cytoreductive surgery or multimodal therapy has been shown to significantly improve outcomes in patients with advanced cancer. However, many patients do not receive this information in a timely manner due to the lack of updates from their treating center. This situation not only puts their quality of life and survival at risk, but also affects their autonomy as patients.

The principle of autonomy is central to medical ethics, and patients have the right to make informed decisions about their treatments. To exercise this right, they need to receive clear, up-to-date and complete information about all available therapeutic options. It is not enough to be offered conventional treatments if there are more advanced alternatives that might be more effective in their specific case. Misinformation, whether due to ignorance or prejudice, is a barrier to patient autonomy, which carries significant ethical and legal implications [24].

Legal and Ethical Implications of Disinformation

Advances in cancer treatment are occurring at an unprecedented rate. Advanced or multimodal treatments have changed the way different types of cancer are treated, especially in advanced stages. However, many patients continue to face therapeutic decisions based on suboptimal protocols, which seriously compromise their prognosis. Adequate documentation is key to ensure that any therapeutic decision is supported by the best available evidence [25].

For example, if a physician rejects immunotherapy or cytoreductive surgery for a patient with metastatic cancer, without adequately justifying his or her decision, he or she is depriving the patient of options that could prolong his or her life or improve his or her quality of life and is limiting his or her opportunities to receive more personalized and up-to-date care [26].

Supported Guidance: Right and Duty

The patient's right to be well informed is also related to his or her legal protection. In many health systems, physicians are required by law to document their decisions in detail, especially when advanced therapies are omitted or rejected. Failure to properly record these decisions can lead to ethical and legal questions. Physicians who are not aware of the latest therapeutic innovations and base their decisions on outdated criteria risk being questioned, and possible negligence cannot be ruled out [27].

This problem is exacerbated when patients seek second opinions and discover that there are therapeutic options that were not previously mentioned to them. In this sense, personalized medicine has become a crucial part of modern cancer treatment, and patients have every right to access these innovations. It is essential that professionals stay up to date and do not cling to protocols that, although they were standard for decades, may not be the most appropriate, safe, best tolerated and effective today [28].

Pillars of the Multimodal Approach in Advanced Cancer: Cytoreductive Surgery, Personalized Immunotherapy, Advanced Radiotherapy and Targeted Therapy

The treatment of advanced cancer has evolved significantly in recent

years thanks to the adoption of multimodal approaches. These include advanced radiotherapy, targeted therapy, personalized immunotherapy, and cytoreductive surgery, all of which have been shown to improve the prognosis and quality of life in patients with advanced cancer. Historically, cytoreductive surgery in patients with advanced metastases was considered futile due to the lack of effective complementary therapies. Although complete elimination of cancer cells is not always achieved, reducing the primary tumor mass can significantly improve the effectiveness of adjuvant therapies such as DC or DEX immunotherapy and radiotherapy. This surgical intervention, which reduces the tumor burden before starting other therapies, allows the immune system, boosted by immunotherapies, to focus on eliminating the remaining tumor cells, improving the overall prognosis of patients [29].

Personalized Immunotherapy: A Key Approach in Eliminating Residual Cells

Immunotherapy, especially dendritic cell therapies and their advanced variants such as exosomes (DEX), has shown great efficacy in managing residual tumors. These therapies have the ability to activate a robust immune response, allowing the patient's immune system to attack tumor cells that were not eliminated by surgery or radiotherapy. In multiple studies, DEX-based immunotherapy has shown potential to induce partial or total remissions in patients who had previously failed to respond to other treatments [30].

Advances in cancer treatment have made it clear that a multimodal approach, managed by a multidisciplinary committee of specialized professionals, is essential. This team includes clinical oncologists, who have chemotherapy and systemic treatments; radiation oncologists, who manage radiotherapy; surgical oncologists, focused on the surgical removal of tumors; and pathologists, in charge of molecular and cellular diagnosis. More recently, specialists in immuno-oncopathology have been integrated, whose role is key in the development of personalized, biological and precision therapies [31].

These new therapies often arise from collaboration between pathologists, oncopathologists , and clinical oncologists who have subspecialized in biotechnology and precision medicine, working together to optimize treatments for each patient. This development confirms that, today more than ever, no single doctor has the sole or final say on the therapeutic approach to cancer. The therapeutic decision must be based on a comprehensive and multidisciplinary vision, where each professional contributes his or her experience to guarantee the best possible treatment for each patient. This collective approach is essential to make the most of the most advanced and personalized therapies offered by current medicine, adapting to the specific needs of each case.

Advanced Radiotherapy: A Comprehensive Approach

Radiotherapy has made significant progress with the use of technologies such as proton therapy and Gamma Knife, which allow precise targeting of tumor cells while preserving surrounding healthy tissue. When combined with immunotherapy, radiotherapy not only acts locally, but also stimulates a systemic immune response, enhancing the body's ability to attack tumors at multiple locations. This synergistic approach has been widely documented for its ability to improve patient survival and quality of life [32].

Targeted Therapies: Personalizing Treatment for Better Results

Targeted therapies, which specifically attack tumor mutations or molecular alterations, offer a key advantage over conventional chemotherapy. By targeting only malignant cells, targeted therapies not only increase treatment efficacy but also minimize adverse side effects. This advantage is crucial in patients with advanced cancer, who often have lower tolerance to aggressive treatments [33]. Personalization of therapies, tailored to the molecular characteristics of each tumor, has been a transformative change in the multimodal treatment of cancer.

Evidence of Quality of Life

Several studies have shown that the combination of cytoreductive surgery , personalized immunotherapy and advanced radiotherapy not only improves disease control, but also the quality of life of patients with advanced cancer. Testimonials from patients treated with these multimodal approaches have shown a significant improvement in their general well-being, energy levels and ability to lead a more active daily life. These treatments, being better targeted and having fewer side effects than traditional therapies, allow patients to maintain greater autonomy and functionality [34].

Reduction of Side Effects

One of the main advantages of the multimodal approach, which combines targeted and personalized therapies, is the significant reduction in adverse effects compared to more aggressive treatments such as conventional chemotherapy. Targeted therapies, by specifically attacking cancer cells, minimize damage to healthy tissues, which reduces toxicity and improves patient tolerance to treatment. This is especially beneficial for patients with advanced cancer, who generally have limited tolerance to more invasive treatments and seek to maintain a better quality of life while receiving treatment [35].

Impact of Personalized and Precision Cellular Immunotherapy in Cancer Treatment: Immunoplasticity and Immunological Memory

Personalized cellular immunotherapy has revolutionized the approach to cancer treatment, allowing for precise adaptation to any histological type and stage of disease progression. The use of dendritic cell exosomes (DEX) has emerged as one of the most innovative strategies to attack tumor cells using the patient's immune system. This is key to reducing relapse or recurrence in early-stage cancers, and especially for patients with metastatic or advanced cancer, who previously had very limited options.

Personalized cellular immunotherapy, with its ability to adapt to any histological type and stage of cancer progression, has proven to be a paradigm shift in cancer treatment, contributed by immuno-oncopathology. Its ability to reduce side effects, generate immunological memory and improve quality of life has provided real new therapeutic opportunities. The combination of immunotherapy with cytoreductive surgery and advanced radiotherapy offers a multimodal approach that maximizes the chances of success while minimizing adverse effects.

Immunoplasticity and Adaptation to Tumor Types

One of the major advances in personalized immunotherapy is immunoplasticity , which allows treatment to be tailored to the specific molecular characteristics of each tumor type. Dendritic cells are loaded with specific tumor antigens, training the patient's immune system to identify and attack cancer cells. This approach is tailored to any histological type of cancer, being personalized based on each patient's tumor mutations. As a result, it has opened the door to treating cancer types that previously did not respond well to conventional therapies [36].

Prolonged Impact and Immunological Memory

A crucial advantage of personalized immunotherapy is its ability to generate immunological memory. Unlike chemotherapy, whose effects are limited to the duration of treatment and are harsh on healthy cells, immunotherapy provides long-lasting protection. The immune system "remembers" how to fight cancer, allowing the immune response to continue long after treatment has been completed. This results in partial or complete remissions, with patients remaining disease-free for months or even years [37].

Reduction of Adverse Effects in Multimodal Treatments

The multimodal approach in the treatment of advanced cancer has shown a significant reduction in adverse effects, especially compared to conventional chemotherapy. Advanced therapies such as immunotherapy and targeted radiotherapy are designed to be more specific, directly attacking cancer cells while sparing healthy cells. This minimizes severe side effects that often limit patients' tolerance to conventional treatments, which can have a negative impact on their quality of life [38].

Improved Quality of Life

The combination treatment approach has a direct impact on the patient's quality of life. Those who receive immunotherapy combined with cytoreductive surgery or advanced radiotherapy report fewer long-term complications and better overall functionality compared to those who undergo chemotherapy alone. This is crucial for patients with advanced cancer, who often have limited tolerance to more invasive treatments. Maintaining an adequate quality of life is essential not only for the physical well-being, but also for the emotional well-being of the patient.

The Synergy of Cytoreductive Surgery and Immunotherapy

Cytoreductive surgery remains a valuable tool in the management of advanced cancer, especially when combined with immunotherapy and advanced radiotherapy. This surgery aims to reduce the total tumor burden, making it easier for the immune system, boosted by immunotherapy, to eliminate the remaining cancer cells. This combination not only improves survival rates, but also allows patients to respond better to subsequent treatments. Thus, the chances of therapeutic success are maximized and adverse effects are minimized, ensuring a comprehensive and personalized approach to cancer treatment.

Benefits of Timely Referral: Key to Obtaining Better Cancer Treatment

Cancer patients seeking advanced therapies often face a path full of obstacles. The lack of options for referral to specialists in new therapies can generate frustration and shatter hopes of accessing a treatment that could improve their prognosis and quality of life. This reality is aggravated when those who should provide support, both doctors and family members, fail to understand the impact that a constructive attitude aligned with the patient's goals can have.

Patients investigating options such as advanced immunotherapy or cytoreductive surgery often encounter a barrier: the lack of support from their environment. However, one of the most valuable factors at this stage is emotional support and openness to exploring innovative options. The family, although not always possessing medical knowledge, plays a crucial role in not becoming an obstacle for the patient. Disorientation or refusal to consider new therapies, far from helping, can generate deep demoralization, negatively affecting the patient's emotional state.

It is important that both the family and the treating professional understand that their greatest contribution is to support and understand the patient's goals, allowing the patient to explore advanced treatments such as precision immunotherapy or targeted radiotherapy, without creating unfounded and unnecessary doubts or mistrust. Constructive support, not based on prejudice or misinformation, is essential to allow the patient to move towards innovative solutions and to make informed decisions about their health.

Patients who feel supported by their loved ones and medical team are better able to cope with the challenges of treatment, which can positively influence their prognosis. Science has shown that emotional well-being has a direct impact on the body's response to cancer treatments, especially when it comes to advanced therapies such as cytoreductive surgery combined with immunotherapy [39].

Adequate support must also be accompanied by an understanding of the real benefits of new therapies. For example, dendritic cell immunotherapy and other advanced variants, such as exosomes, have shown consistent results, reducing tumor burden and lengthening the patient's immune response, even weeks or months after the last application. This approach has allowed many patients with advanced or metastatic cancer to maintain a significantly better quality of life than they would obtain with chemotherapy alone [40].

Referral to Specialists: A Key Path to Success Epilogue

Timely referral to specialists who are experts in advanced therapies plays a vital role in this process. Patients who access them have more opportunities to access personalized treatments that not only attack the tumor, but also boost the immune system to fight residual tumor cells. This type of comprehensive approach is key to prolonging life and improving the quality of life of the patient, an objective that should be a priority for every medical team [41].

The importance of patient support cannot be underestimated. When those around the patient, both in the family and medical fields, become pillars that facilitate the path to recovery, the therapeutic process becomes much more effective. However, when support is non-existent or, worse still, becomes an obstacle, the chances of success are greatly diminished. Understanding that support must be constructive, encouraging and based on the best available information is fundamental to the success of cancer treatment. May this approach inspire patients and their loved ones to work together, rather than being an emotional burden that negatively affects the path to recovery [42].

Conclusions

In the complex landscape of cancer treatment, it is essential that patients, their families and medical professionals take an open and constructive stance towards advanced therapies. Success in the fight against this disease depends not only on the ability of the medical team to offer innovative and personalized treatments, but also on the emotional and mental support that surrounds the patient. Modern oncology medicine has shown us that multimodal approaches, such as cytoreductive surgery, immunotherapy and advanced radiotherapy, can make a crucial difference in the prognosis and quality of life. However, access to these options depends both on the information that the patient receives and on the attitude that those around them adopt in the face of uncertainty.

Positive support, based on trust and understanding, becomes a therapeutic resource as valuable as the therapies themselves.

Misinformation, prejudice or refusal to explore new horizons not only limit medical possibilities, but directly affect the patient's hope and willingness to face his or her illness with determination. In a context where science continues to offer new opportunities, it is vital that both the patient and his or her close circle have the freedom and knowledge to make informed decisions, and that medical professionals act as up-to-date and understanding guides.

Ultimately, true success in cancer treatment is not measured by access to remission or cure alone, but by the ability to improve the quality of life and prolong the well-being of the patient, maintaining their dignity and hope at every stage of the process [43].

Currently, a high percentage of cancer patients are cared for in their treatments by a clinical oncologist, who is responsible for the administration of chemotherapy and referral to other specialists, such as oncologic surgeons or radiotherapy professionals. This relationship, although crucial, is often characterized by little interaction in daily experience and a limitation in academic training regarding advanced therapies [44].

It is essential that patients are aware that the oncologist who initially treats them is not the sole authority or the final word regarding their therapeutic options [45]. In a constantly evolving oncological landscape, with the advent of new treatment modalities, it is essential that patients understand the various professional profiles they may encounter in the oncological field. The available options, which include not only chemotherapy, radiotherapy and surgery, but also a variety of advanced treatments, represent less than 15% of the total alternatives currently available [46].

Therefore, when faced with a cancer diagnosis, it is vital that patients seek a second opinion and educate themselves about the various treatment options, thus ensuring informed and empowered decision-making about their health and well-being [47].

Appendix

Keys to Consider in Modern Therapeutic Planning in Cáncer	
Appearance	**Description**
Open and constructive stance	Patients, families and physicians should be open to considering advanced therapies.
Success in treatment	Success depends on the skills of the medical team and emotional support to the patient.
Access to treatment options	Information and the attitude of the environment are key to influencing access to treatments.
Positive accompaniment	Trust-based support is an essential resource in patient treatment.
Importance of knowledge	It is crucial that the patient and those around them know all the available options.
Success in cancer treatment	Success in treatment is measured by the improvement in the patient's quality of life and well-being.
Attention of the clinical oncologist	The clinical oncologist mainly manages treatments with chemotherapy and referrals.
Patient awareness	The initial oncologist is not the sole authority in decisions regarding therapeutic options.
Diversity of therapeutic options	Less than 15% of the options available today are limited to chemotherapy, radiotherapy or surgery.

Figure 1: Key Factors for Success in Cancer Treatment: Support and Therapeutic Options

The table below highlights key aspects for successful cancer treatment, focusing on the importance of an open and constructive approach on the part of the medical team and the patient's environment. Adequate clinical care, access to advanced therapeutic options, and positive support are essential elements to improve the patient's quality of life and maximize their chances of success. In addition, it underlines the importance of the diversity of therapeutic options, the search for second opinions.

Challenges and rights of cancer patients in the eligibility of their therapies		
Aspect	**Description**	**Consequences**
Lack of clear documentation	Patients do not receive adequate documentation regarding their treatment decisions, which affects their confidence and ability to seek a second opinion.	The patient does not have access to all the information about his treatment.
Failure to record key decisions	The rejection of certain treatments such as surgery, immunotherapy or radiotherapy in metastatic cancer is not adequately justified.	The patient may not receive treatments that could improve their quality of life and prognosis.
Impact on the patient's right to autonomy	The patient is left uninformed, which affects his or her ability to evaluate therapeutic options and make informed decisions about his or her treatment.	Patient autonomy is affected, generating distrust in the health system.
Ethical and legal risks for physicians	Lack of documentation can lead to ethical and legal questions against physicians who do not justify their decisions based on current evidence.	Physicians face legal risks for failing to adequately document their therapeutic decisions.
Advances in personalized and modern therapies	The application of outdated criteria deprives patients of advanced therapeutic options adapted to their situation, compromising their prognosis.	The patient does not receive personalized treatments, which can worsen his prognosis.

Figure 2: Ethical Challenges and Consequences of Lack of Documentation in Cancer Treatment

This table highlights critical issues related to lack of documentation and the impact on cancer care. Omitting key records and decisions not only affects patient autonomy, but also carries ethical and legal risks for physicians. Failure to properly document can deprive patients of advanced and personalized treatment options. These challenges underscore the need for a transparent approach to medical record-keeping, ensuring access to the most innovative therapies and protecting both, patient and physician.

Impact of DEX Cellular Immunotherapy in Cancer Treatment	
Impact of Personalized and Precision Cellular Immunotherapy in Cancer Treatment	Personalized cellular immunotherapy uses dendritic cell exosomes to attack tumor cells. Adapted to any type of cancer and stage, it offers new therapeutic opportunities, reduces side effects, generates immunological memory and improves quality of life.
Immunoplasticity and Adaptation to Tumor Types	Immunoplasticity allows treatment to be tailored to the specific molecular characteristics of each tumor. Dendritic cells loaded with tumor antigens train the immune system to attack cancer cells.
Prolonged Impact and Immunological Memory	Immunotherapy generates immune memory, allowing for a prolonged response. The immune system 'remembers' how to fight cancer, resulting in long-term or complete remissions.
Reducing Adverse Effects in Multimodal Treatments	Multimodal treatments, including immunotherapy and advanced radiotherapy, reduce adverse effects and preserve healthy cells, improving tolerance to treatments compared to chemotherapy.
Improved Quality of Life	The combination of treatments, such as immunotherapy and cytoreductive surgery, improves quality of life, with fewer complications and better functionality, which is crucial for patients with advanced cancer.
The Synergy of Cytoreductive Surgery and Immunotherapy	Cytoreductive surgery, combined with immunotherapy and advanced radiotherapy, reduces tumor burden and facilitates the elimination of remaining cancer cells, improving survival rates and response to treatments.

Figure 3: Pillars of Multimodal Treatment in Advanced Cancer

The table presents the fundamental pillars of multimodal treatment in advanced cancer, highlighting the main therapeutic strategies. Each pillar, from chemotherapy to targeted therapies, offers specific benefits to improve the patient's prognosis. Cytoreductive surgery reduces tumor burden, facilitating the success of other treatments, while personalized immunotherapy enhances the immune response adapted to the tumor. Advanced radiotherapy allows greater precision in tumor destruction. Together, these approaches provide comprehensive care, improving the patient's quality of life.

Pillars of the multimodal approach in advanced cancer		
Pillar	**Description**	**Benefits**
Chemotherapy:	Drug treatment that uses chemical agents to destroy cancer cells throughout the body.	Chemotherapy targets fast-growing cells, such as cancer cells, but it can also affect healthy cells. It may be given as primary, adjuvant, or palliative treatment, depending on the stage and type of cancer.
Cytoreductive surgery	Surgical intervention that reduces tumor load before starting other therapies, improving the effectiveness of adjuvant treatments.	It improves the effectiveness of immunotherapy and radiotherapy, improving the overall prognosis.
Personalized immunotherapy	Use of personalized therapies (dendritic cells, exosomes) to activate an immune response against residual tumor cells.	It induces partial or total remissions in patients who did not respond to other treatments.
Advanced radiotherapy	Using advanced technologies such as proton therapy and Gamma Knife to precisely target tumor cells and stimulate a systemic immune response.	Improves survival and quality of life by combining precision with immune response.
Targeted therapy	Treatments that attack specific mutations or molecular alterations of the tumor, personalizing the treatment for better results.	Minimizes side effects and improves efficacy by targeting malignant cells.

Figure 4: Pillars of the Multimodal Approach in Advanced Cancer

This table outlines essential cancer treatment pillars: chemotherapy, cytoreductive surgery, personalized immunotherapy, advanced radiotherapy, and targeted therapy. Each approach offers distinct benefits. Cytoreductive surgery reduces tumor size, personalized immunotherapy tailors treatment to the patient's immune system, advanced radiotherapy focuses on precise targeting, and targeted therapy aims at specific cancer pathways for improved effectiveness with fewer side effects.

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