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New trends in cancer treatment using natural medicine Part 1

Abstract

Science in Cancer, using Alternative and Natural Medicine Cancer Treatments. Using Biomedicine treatments. Cancer drug treatments and advanced technologies, such as the power of AI

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Introduction

This article will discuss the new and improved cancer treatments. Additionally, alternative and Natural Medicine treatments can be incorporated into a care plan. Also included in the journal will be other options on what modality would be your best choice for your treatment care plan.

What is cancer?

Cancer is a disease where abnormal cells grow uncontrollably and can spread throughout the body. It can affect nearly any part of the body, and there are many treatment options for varying types of cancer.[1] Cancer arises when cells divide uncontrollably, ignoring signals to stop or die, and may form tumors. Tumors can be benign (non-cancerous) or malignant (cancerous). Malignant tumors invade nearby tissues and can metastasize (spread) to other parts of the body. For example, not all cancers form solid tumors-blood cancers like leukemia do not.

Causes of cancer

Genetic mutations are the root cause, affecting genes that regulate cell growth and repair. These mutations may be: Inherited from parents and acquired due to environmental exposures (e.g., tobacco smoke, UV radiation, carcinogens). Age increases risk, as mutations accumulate over time.

Symptoms: Symptoms vary by cancer type but may include: Fatigue, unexplained weight loss or gain, Skin changes, persistent cough, difficulty swallowing, Changes in bowel or bladder habits, unusual bleeding or bruising.[2]

Diagnosis and staging

Screening tests (e.g., mammograms, colonoscopies) help detect cancer early.

Staging determines how far cancer has spread, guiding treatment decisions.

Treatment options

Surgery, chemotherapy, radiation therapy, immunotherapy, and targeted gene therapies are common treatment options. Treatment depends on cancer types, stage, and individual health factors.

Prevention tips

i. Avoid smoking and excessive alcohol use

ii. Maintain a healthy weight and diet

iii. Exercise regularly

iv. Protect skin from UV exposure

v. Get recommended screenings

Living with cancer

Supportive care helps manage side effects and emotional challenges.

Survivorship plans guide long-term health after treatment.

How to detect and study cancer

Cancer cells are detected using biopsies, imaging, and blood tests, and studied through advanced techniques like molecular profiling, fluorescence microscopy, and liquid biopsies. These methods help identify cancer early, understand its behavior, and guide treatment decisions.

Imaging Techniques: Such as CT scans, MRI, and X-rays to visualize abnormalities in the body.

Blood Tests**:** To detect specific markers that may indicate cancer.

Biopsy: A sample of tissue is removed and examined under a microscope to confirm the presence of cancer cells.

Imaging Techniques: CT scans, MRIs, PET scans, and X-rays visualize tumors and abnormalities in the body.

Blood Tests: Detect cancer markers like PSA (prostate), CA-125 (ovarian), or abnormal cell counts.

Liquid Biopsies: Analyze blood, saliva, or urine for circulating tumor cells (CTCs), tumor DNA (ctDNA), and Exosomes: offering a non-invasive way to detect cancer.

How cancer cells are studied

Pathology: Microscopic examinations of cells and tissues to determine cancer type, grade, and stage.

Molecular Profiling: Genomic sequencing identifies mutations and helps match patients with targeted therapies.

Biomarker Analysis:

- *CTCs*: Found in blood, indicate metastasis risk.
- *ctDNA*: Fragments of tumor DNA in blood, useful for early detection.
- *Exosomes*: Vesicles carrying RNA/DNA/proteins, elevated in many cancers.

Fluorescence Microscopy: Visualizes cancer cells using fluorescent tags to track proteins and genetic material.

Electrochemical Biosensors: Detect tumor markers with high sensitivity and speed.

In Situ Monitoring: Tracks molecules like telomerase and microRNAs inside living cells to study cancer progression.

Emerging technologies

Artificial Intelligence: This enhances imaging and molecular data analysis for faster, more accurate diagnosis.

First, according to the National Institute of Library, they have found that AI has a lot of technology to offer. a systematic survey of the current status of AI technologies used for cancer diagnoses and therapeutic approaches. This was discussed in AI-facilitated imaging diagnostics using a range of modalities such as computed tomography, magnetic resonance imaging, positron emission tomography, ultrasound, and digital pathology, highlighting the growing role of deep learning in detecting early-stage cancers. The Institute also explored new applications of AI in genomics and biomarker discovery, liquid biopsies, and non-invasive diagnoses. In therapeutic interventions, AI-based clinical decision support systems, individualized treatment planning, and AI-facilitated drug discovery are transforming precision cancer therapies. The review also evaluates the effects of AI on radiation therapy, robotic surgery, and patient management, including survival predictions, remote monitoring, and AI-facilitated clinical trials. Also discussed were the most important challenges, such as data privacy, interpretability, and regulatory issues, and recommendations for future directions that involve the use of federated learning, synthetic biology, and quantum-boosted AI. This review highlights the groundbreaking potential of AI to revolutionize cancer care by making diagnostics, treatments, and patient management more precise, efficient, and personalized. In recent years, the interactions between the immune system and the immunological tumor microenvironment (TME) have raised eyebrows for better treatment.

Pros and cons of AI

Key challenges limiting AI adoption in cancer care: core issues include lack of data standardization, biased training data, and insufficient clinical validation. These nested problems collectively hinder the reliability, generalizability, and clinical utility of Future perspectives and emerging AI trends in oncology. Here's a clear, engaging breakdown of the major AI trends shaping cancer treatment today, grounded in the latest reporting and research from your search results.

i. AI trends transforming cancer treatment

AI is no longer a futuristic add-on in oncology - it's becoming a core engine behind diagnosis, treatment planning, and patient support. Based on recent findings, here are the most important trends.

ii. AI-driven precision treatment decisions

AI is increasingly used to determine who actually needs aggressive treatment, such as chemotherapy.

New AI tools can analyze tissue images to predict tumor aggressiveness and identify patients who may safely skip chemotherapy.

This reduces unnecessary toxicity and speeds recovery.

Why it matters: More personalized care, fewer side effects, and better quality of life.

iii. AI for early detection & diagnosis

AI models are becoming more powerful at detecting cancer earlier and more accurately.

Harvard researchers developed a ChatGPT-like model that can diagnose cancer, predict survival, and guide treatment across 19 cancer types. AI can detect patterns in imaging and pathology that humans often miss.

Why it matters: Earlier detection dramatically improves survival rates.

iv. Genomics + AI for personalized oncology

AI is accelerating the use of genomics to tailor treatments. Global oncology experts highlight genomics and AI as major breakthroughs in 2025 cancer care, enabling more targeted therapies and better treatment matching.

Why it matters: Treatments become more effective and less "one-size-fits-all."

v. Predictive models for treatment response

AI is being used to predict how a cancer will behave and how a patient will respond. A new AI tool predicts whether oropharyngeal cancer (ENT) will spread, helping clinicians decide who needs aggressive therapy or clinical trials.

Why it matters: Smarter treatment escalation - or de-escalation - based on risk.

vi. AI-Enhanced radiation therapy

AI is improving radiation oncology workflows and patient outcomes. The ENRICH platform uses AI and population health analytics to identify barriers to quality radiotherapy and personalize support for patients at risk of treatment interruptions.

Why it matters: More consistent, equitable treatment delivery.

vii. AI as a partner in clinical visits

AI is influencing how patients and clinicians communicate. Health systems are training clinicians to integrate patient-generated AI outputs into conversations, using them as starting points for education and shared decision-making.

Why it matters: AI becomes part of the care dialogue - not a replacement for clinicians.

viii. AI infrastructure for cancer research

Institutions like the National Cancer Institute emphasize AI's role in: Analyzing massive datasets (imaging, genomics, clinical records); Discovering new biomarkers; Accelerating drug development

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Why it matters: Faster research cycles and more breakthroughs.

ix. Holistic AI platforms in oncology

AI is increasingly used across the entire cancer care continuum:

Please take a look at the Eight-point conceptual framework for translational AI in oncology. This framework delineates eight critical areas required for effective AI deployment in cancer therapy: Data Acquisition, Preprocessing, Model Development, Internal/External Validation, Deployment & Monitoring, Ethical Considerations, Regulatory Compliance, and Patient-Centric Design. Each one is defined by its prime purpose, primary challenges, and strategic needs. All these dependent factors make up an end-to-end handbook for AI development toward safe, ethical, and equitable clinical release in oncology. The future landscape of AI in healthcare, focusing on four key domains: improving patient care through personalization, safeguarding data privacy, addressing ethical dilemmas in AI use, and training healthcare professionals to effectively implement and govern new technologies with responsibility and skill. The second innovation for cancer comes from the Johnson & Johnson Company.

Nanodevices: Deliver molecules into cells for real-time tracking and manipulation.

Next-Generation Sequencing (NGS): Offers deep insights into cancer genetics and evolution.

These tools are revolutionizing how we detect and understand cancer, enabling earlier diagnosis and more personalized treatments.

Informative safety precautions

The National Cancer Institute does allow anyone to reprint and use the information to benefit the cancer patient. Please see their website for updated information: January 17, 2023m If you would like to reproduce some or all of this content, see Reuse of NCI Information[3] for guidance about copyright and permissions. In the case of permitted digital reproduction, please credit the National Cancer Institute as the source and link to the original NCI product using the original product's title; e.g., "How Cancer Is Diagnosed was originally published by the National Cancer Institute." Want to use this content on your website or other digital platform? Our syndication services page shows you how.[4] Other safety precautions in using all-natural interventions and current cancer medications do have side effects. Some plant-based medications are peanuts in nature. Always check with the pharmacists and your family doctor for ingredients. For example, Wild Jungle Peanut Seeds (Arachis hypogaea). If you are allergic to any peanut content, do not eat them. This group is in the Non-GMO Heirloom by Isla's Garden Seeds that originates from the Amazon rainforest. Man-Made medication for Cancer, such as BlincoCyto or (blinatumomab), an injectable immunotherapy treatment that may be used to treat B-cell precursor acute lymphoblastic leukemia Always ask your family doctor or pediatrician if you can take any medication with herbal medicine. Always check for the ingredients.[5]

Cancer information directory

St. Jude's Children's Research Medical Hospital

262 Danny Thomas Place

Memphis, TN 38105

1-866-278-5822

(Do not forget to make a donation)

Johns Hopkins Hospital

Hospital in Baltimore, MD

1800 Orleans St, Baltimore, MD 21287 • 72 mi

Open 24 hours (410) 955-5000

Case study

This case study is about using holistic treatment as part of or all of the client's cancer treatment.

Client: Atrium Health

Project: Levine Cancer Institute Proton and Advanced Radiation Center

Case Study Focus: Technology Integration and Patient-Centered Care

Practice: Healthcare

The More Group 1-888-801-More

801 Cherry Street

Suite 500

Fort Worth, Texas 76102

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What new trend for alternative and natural medicine is being used for cancer treatments: Please note that while these integrative treatments are not new, however, they are being studied to further improve the viable treatment for the patient. Here's a clear, grounded look at emerging trends in alternative and natural medicine being explored alongside conventional cancer treatments, based on the latest information from credible sources. Emerging trends in natural & integrative cancer care: These approaches are complementary, not replacements for medical treatment. They are being studied for symptom relief, quality-of-life improvement, and potential supportive benefits.[6]

Integrative oncology programs

Modern cancer centers are increasingly blending evidence-informed natural therapies with standard treatments. These programs combine:

Nutrition therapy

Botanical supplements

Mind-body practices

Lifestyle interventions

This trend is highlighted in integrative cancer protocols that aim to support patients holistically.

Botanical & herbal medicine research

There is growing scientific interest in botanicals used in traditional systems like Ayurveda.

Recent reviews explore how plant-based compounds may interact with modern cancer therapeutics, including:

Curcumin

Ashwagandha

Neem

Boswellia

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These are being studied for anti-inflammatory, antioxidant, and immune-modulating effects.

Mind-body medicine

Holistic cancer care research shows increasing use of:

Meditation

Yoga

Breathwork

Stress-reduction therapies

These practices are being explored for their ability to reduce treatment side effects and improve emotional well-being.

Nutrition-focused therapies

Patients and clinicians are paying more attention to:

Anti-inflammatory diets

Plant-forward nutrition

Intermittent fasting protocols (studied for chemo tolerance)

Gut-microbiome support

Nutrition is a major pillar of integrative cancer care programs.

Lifestyle & immune-support approaches

Holistic cancer research highlights interest in:

Sleep optimization

Physical activity

Stress reduction

Immune-supportive habits

Please note: These are not cures but may help support resilience during treatment. Also, these types of activities can keep the patients' minds off of he cancer treatments and anything else they are worried about.

Natural compounds in scientific cancer research

Some natural substances are being studied in labs for potential anti-cancer properties, such as:

Green tea catechins

Medicinal mushrooms (reishi, turkey tail)

Omega-3 fatty acids

Vitamin D

These are being evaluated for their biological activity, not as standalone treatments.

Holistic approaches to reduce side effects

Alternative therapies gaining attention for symptom relief include:

Acupuncture (for nausea, pain)

Massage therapy

Aromatherapy

Hyperthermia (in some integrative clinics)

These are used to complement-not replace-oncology care.

A quick but important note

Natural or alternative therapies should always be discussed with a medical professional, because some herbs and supplements can interact with chemotherapy, radiation, or immunotherapy.[7]

Conclusion

Cancer treatment is an ever-evolving giant in the medical field. There are always new ways for different layers of treatments, such as Holistic interventions. Holistic interventions are taking the cancer field by storm.[8]

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None.

Conflicts of interest

The author declares that there are no conflicts of interest.

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