

Review Article

Cancer-new therapies aligned with Homoeopathy

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ABSTRACT

Cancer is a disease that everyone fears & it is obvious that people are fearful about cancer. The current article discusses various therapeutic interventions of cancer such as R-Cu therapy, CAR-T cell therapy, chronotherapy from the modern system of medicine. It also discusses the homoeopathic intervention in cancer that has medicines on the lines of the R-Cu therapy, CAR-T cell therapy, CRISPR & especially the chronotherapy. The article suggests a treatment protocol based on homoeopathic system of therapeutics aligning with the interventions mentioned above. The application of homoeopathy based on its essential medicine (EM) properties, properties that help the system to cover the masses backed up by a national policy are also discussed in the article. The article aspires that the homoeopathic therapeutic system plays a significant role in dealing with the current non communicable disease menace like cancer in the national level.

Keywords: R-Cu, CAR-T, CRISPR, Homoeopathy, Cancer, Miasm

INTRODUCTION

Studies have shown that by making certain life style changes, one can reduce the risk of dying from cancer by up to 50%. The study studied 30 different types of cancer & 18 life style factors that one control like diet, exercise & smoking. The results of the study showed that 40% of cancer cases & about 50% of cancer deaths in 2019 in the United States were associated with these factors. This shows that if one makes simple changes in how they live one can significantly lower the chances of getting cancer & reduce the risk of dying from cancer by 50%.¹ The most common cause of cancer related mortality is metastasis. Metastasis is the spread of cancer cells from the place where they first formed to another part of the body. It is

supposed to have a complex mechanism but there is single conclusive theory. The popular theory is that metastasis occurs because cancer cells break away from the original or primary tumor, travel through the blood or lymph system & form a new tumor in other organs or tissues.^{1,2}

RISK FACTORS

Five simple steps are given in descending order as higher to lower risk factors for cancer. The highest risk factor is 'smoking'. Smoking remains the leading preventable cause of cancer that is responsible for nearly 20% of cancer cases & deaths in the year 2019. Quitting smoking even after years of use can dramatically reduce this risk. Human body is the biggest forgiver. It does not complain to you

that I have been tortured by smoking for years so I will not forgive you instantly. In spite of being troubled by smoking for so long it retaliates through forgiving & repairing.¹ Next in the list is obesity. It is the second most significant modifiable risk factor that accounts for 7.6% of cancer cases as per the study. Excess body weight is linked to several types of cancer-like breast, colorectal & pancreatic. Here, the underlying cause is usually chronic inflammation that promotes development of cancer. Maintaining a healthy weight through diet & exercise is the only way to reduce this risk.¹

The next risk is consumption of alcohol. Alcohol consumption is responsible for 5.4% of cancer cases. These cases include cancer of liver, breast & esophagus. Drinking in moderation is the key if one cannot avoid drinking. The permissible limit is one drink per day for women & two drinks per day for men. The bottom line is that the less one drinks the lower is the risk of developing alcohol related cancers.¹

Physical inactivity is responsible for 3% of cancer cases. Regular exercise not only helps maintain a healthy weight but also reduces the risk of developing cancers such as colon, breast & endometrial cancer. Moderate physical activity like gardening, walking, doing house hold chores can make a significant difference. What is required is 150 minutes of moderate intensity exercise or 75 minutes of vigorous intensity exercise per week.¹

Vaccines & cancers are linked through Human Papilloma Virus (HPV), Hepatitis B & Hepatitis C vaccinations. Among these three, the HPV vaccine prevents more than 90% of cancers caused by the HPV & these include cancers like cervical, anal, head & neck. Getting these three vaccinations reduces the risk & this reduction varies by infection.¹

Hence, all the four interventions like quitting smoking, maintaining a healthy weight, limiting alcohol consumption, staying physically active & getting vaccinated reduces the risk by 36% when we sum up all the risk reduction percentage of the first four categories. The risk reduction varies by infection when one gets vaccinated. Hence, the risk reduction percentage through vaccinations is not added in this enumeration of 36%.¹

The data on the prevalence of cancer globally released by the international agency for research on cancer (IARC) ahead of world cancer day that is celebrated on 4th February every year, the risk of dying from cancer before the age of 75 years in India is 7.2%. Similarly, this figure for both United States & Canada is 8.8%. According to the union for international cancer control (UICC), despite the progress made in early detection of cancers, treatment & care of cancer patients, significant disparities in treatment outcomes exist not only between high & low-income regions of the world but also within countries. Further, UICC elaborated 'where someone lives should not determine whether they live'. The agency also says that

tools exist to enable governments to prioritize cancer care & to ensure that everyone has access to affordable, quality services & it mentions that this issue is not resource issue but a matter of political will.²

Similarly, the risk of developing cancer before the age of 75 is 10.6. The top three leading cancers that are ranked by deaths for men are lip cancer, oral cavity cancer, lung cancer & esophagus cancer. Similarly, for women the related cancers are breast, cervix uteri & ovary cancers. The IARC report mentions that age standardized mortality rate for men is 66.5, for women it is 62.6 & for both male & female it is 64.4. The following table gives the epidemiological tools through incidence, prevalence & mortality of cancers in India.²

LITERATURE GLANCE

The Tata Memorial Centre (TMC) did the research for a decade & grafted human breast cancer cell in mice to induce tumours. Following this, the mice then received chemotherapy, radiotherapy or surgery. Researchers found human DNA called cfChPs & cancer proteins in mice brains. Some mice were given compounds to deactivate or destroy cfChPs. It was seen that these mice had minimal human cfChPs or cancer proteins in their brains. Thus, this theory proved that cfChPs may contain cancer causing genes & some migrate through blood to enter healthy cells in other organs causing metastasis. To neutralize cfChPs, TMC doctors worked out a pro-oxidant compound called (R-Cu) or resveratrol from the skin of the grapes/berries along with copper. This combination developed as a nutraceutical was used in some patients of blood, stomach, oral & brain cancers. A nutraceutical is a food or food product that provides health benefits beyond basic nutrition often due to its added bioactive compounds or medicinal properties. This R-Cu generates free oxygen radicals that can bind with chromatin. R-Cu also prevents chemotherapy related toxicity. It also minimizes aggressive behaviour of cancer.³⁻⁷

The results of a study done 19 years ago showed a decrease in the transformation efficiency of the plasmid after resveratrol treatment & although all types of mutations were recorded, point mutations (deletions/substitutions) were found to be the pre dominant ones. Resveratrol alone resulted in deletion of mainly guanine bases. Since copper ions are known to be found in the nucleus bound to guanine bases in chromatin, the results suggested mobilization of such endogenous copper by resveratrol resulting in pro-oxidant deoxy ribo nucleic acid (DNA) cleavage at the site. Concentration of copper is reported to be elevated in various malignancies & the current studies might explain the reported anti-cancer activity of resveratrol in various cancer cell lines.³⁻⁷

The researchers also proved that the toxic effects of chemotherapy are primarily caused by the cell free chromatin segments that emerge from dying cells & continue the vicious cycle of killing healthy cells &

causing inflammation. This finding in particular challenges the dogma that toxicity caused by chemotherapy is due to the direct damaging effect of drugs on healthy cells. The authors did some preclinical studies that showed promising results with the use of resveratrol – copper combination. With this background, the researchers tested the combination on 25 patients undergoing autologous bone marrow transplantation for multiple myeloma & 30 patients with advanced gastric cancer. In both the studies, the toxicity of chemotherapy was far less among patients who received the resveratrol-copper combination.³⁻⁷

Resveratrol-copper is a nutraceutical that retards ageing parameters such as getting rid of amyloid plaques that are responsible for Alzheimer's disease. It also prevents telomere shortening, inflammation, DNA damage, chromosomal abnormalities & reduces blood levels of cholesterol & glucose.³⁻⁷ Resveratrol- Copper has multiple other health benefits to the person consuming the combination. It improves cognitive score & general mental state.³⁻⁷

ABOUT RESVERATROL

Resveratrol is also known as trans 3,5,4-trihydroxystilbene is a Stilbenoid. The amount of resveratrol found in red grape skin is the highest.³⁻⁷

CAR-T CELLS APPROACH

In a study, the authors concluded that the distinct structural modification in Chimeric Antigen Receptor (CAR)-Thymus induced lymphocyte cells design confers the novel humanized CD 19 CAR with a favourable balance of efficacy to toxicity providing a rationale to test the CAR-T cells construct in a phase I trial. Reports also indicate that CAR-T cells are a new form of immunotherapy, a fledgling branch of cancer treatment.

The process involves reengineering the body's Thymus induced lymphocytes cells with some genetic material & the therapy selectively targets cancer cells for destruction. This made in India therapy's price tag is 1/10th of its cost in the United States. The Indian CAR-T cells had less toxicity compared to the western CAR-T cells. None of the patients developed cytokine storms through which the body's immune system responds too aggressively to infection.⁸⁻¹⁰

In the CAR-T cell therapy, the patient's white blood corpuscles (WBC) are collected & T cells gathered from the WBC & transduced with a 'viral vector' that are tools used to deliver genetic material into WBCs. Through this process, the T cells express certain antibody. Further, these T cells are multiplied in the high technology laboratory at Indian institute of technology, Bombay. Multiple tests are done in this laboratory to check for toxicity before given as an infusion to the patient.⁸⁻¹⁰ The CAR-T cell therapy story starts with Dr. Gaurav Narula of TMC, Mumbai in

2015. Dr. Narula, a paediatric haematologist oncologist pursued oncology & was focused on CAR-T cell therapy, a personalized cancer treatment that used each patient's blood, specifically its T-cells, genetically modifies these cells in the laboratory to give them cancer fighting powers. Following that, those CAR-T cells are infused back into the patient's body.⁸⁻¹⁰

CAR-T cells therapy is used when the cancer stops responding to chemotherapy. The therapy is not only specific to the patient the modified cells are also designed to locate & destroy cancer cells in the body. Dr. Narula teamed up with Dr. Purwar of IIT, Bombay & Dr. Terry Fry of the CAR-T cell program at the National Cancer Institute, Bethesda, United States of America (USA). In 2012, the six-year-old Emily Whitehead of New Jersey, USA became the first paediatric patient to receive CAR-T cell therapy for Leukaemia at the children's hospital in Philadelphia. This CAR-T therapy was applied in TMC in 2015 with Dr. Fry as the knowledge partner.⁸⁻¹⁰

In 2019, Dr. Purwar of IIT, Bombay made the first breakthrough in developing the functional prototype. The major challenge was to build a Gene Delivery Vehicle (GDV) that the duo developed in IIT, Bombay. The duo also roped in Dr. Hasmukh Jain as the principal investigator in the clinical trial. The obstacles through the two phases of COVID 19 halted the clinical trials. Dr. Narula, the principal investigator of pediatric Acute Lymphocytic Leukaemia (ALL) at Tata Memorial Hospital (TMH), Dr. Jain, the principal investigator of the adult B-cell lymphoma study did the clinical trials at the advanced centre for treatment, research & education in cancer (ACTREC), the research & development (R&D) wing of TMH.⁸⁻¹⁰

In October 2023, the commercial use of this therapy to treat certain blood cancers was approved by the central drugs standard control organization (CDSCO), India. Dr. Jain oversaw the multicentre Phase 1 & 2 pivotal clinical trial involving 60r/r B-cell lymphoma & leukaemia patients found that the therapy showed balance of efficacy & low toxicity. This is a significant advantage in clinical management post-infusion especially in settings with resource constraints.⁸⁻¹⁰

The major challenge of the therapy is the cost. Currently, the CAR-T cell therapy costs ₹ 4millions. There is a need to find more affordable options. Meanwhile, the trio has started R&D work on CAR-T cell therapy for solid tumors also. Further areas of interest are at diversification through going beyond oncology while exploring its use on autoimmune disorders, heart diseases & infectious diseases.⁸⁻¹⁰

CHRONOTHERAPY

Scientists have discovered that aligning chemotherapy & other cancer treatments with our body's natural biological rhythms known as the circadian clock can significantly

improve the effectiveness of these treatments. This emerging field is called as 'Chronotherapy'.¹¹⁻¹⁹ Human bodies follow a 24-hour cycle called the circadian rhythm that regulates all the activities like sleep, wakefulness, body temperature, metabolism, cell growth. Every cell in our body that includes cancer cells is influenced by this rhythm. This internal clock decides the response of the cells to external factors that includes medications.¹¹⁻¹⁹

Studies have demonstrated that cancer cells like healthy cells are receptive to certain treatments at specific times of the day. Multiple studies used advanced methods to investigate the way cancer & healthy cells responded to chemotherapy drugs at different times of the day. The studies found that chemotherapy can be more effective & less toxic when administered during the high vulnerability of cancer cells. At this time, the healthy cells are more resistant as well.¹¹⁻¹⁹

To illustrate this point, a drug 'Cisplatin' used in chemotherapy was seen to work best when administered with body's circadian rhythm alignment. The alignment also had reduced the side effects in the healthy cells while optimizing the drug's impact on the cancer cells. Another example regarding the positive aspects of chrono-therapy is with the Triple Negative Breast Cancer (TNBC). This is one of the most aggressive forms of breast cancer that has very limited therapeutic options.

Live imaging was applied to monitor the circadian rhythms, growth cycles & medication responses of these cancer cells in real time. The drug named 5-Fluorouracil (5-FU) which is used as a common chemotherapy agent demonstrated optimum effectiveness against cancer cells between 8am & 10am. It was seen that the key genetic factors that are called as the 'Core Clock Genes' (CCG) that heavily influence the response of the cancer cells to treatment were at optimal level of influence based on the time of the day.

Understanding the role of the 'Core Clock Genes' regarding their optimal influence on cancer cells during the course & time of the treatment is expected to be the most effective tool towards cancer treatment using the circadian rhythm of the body. Scientists can predict effectively about the timing to optimize the effect of chemotherapy.¹¹⁻¹⁹

The research regarding the personalized approach to cancer therapy is also crucial. Through better understanding of the individual's circadian rhythm, oncologists can plan chemotherapy at times that offer the best chance of success while reducing the harm to healthy cells.

This particular approach is relevant to cancers like Acute Myeloid Leukemia (AML). In AML, the body's natural processes like the p53 tumor suppressor pathway are critical to the successful outcome of the treatment. P53 is a tumor suppressor protein that has a role in preventing

cancer by regulating cell division & cell death. It is a natural defence system against cancer.¹¹⁻¹⁹

One of the biggest obstacles in the treatment of cancer is to balance the effectiveness of the therapy with the side effects. The process of chemotherapy often damages healthy cells that lead to unwanted side effects like fatigue, nausea & hair loss. Through chronotherapy, doctors will be able to give cancer patients treatments at the time when the healthy cells are least likely to be affected. This process will help the treatment process to reduce the side effects potentially. The implications of chronotherapy are encouraging as it uses personalized approach. Through this approach, treatments can be personalized based on the type of cancer & genetic factors but also on the time of day. This is a small adjustment that has a huge difference in outcomes. The exploration of the timing of chemotherapy in cancer holds lots of promise & potential for more effective & personalized cancer therapies.¹¹⁻¹⁹

CRISPR & GENE EDITING TECHNOLOGIES

In 2013, researchers found that a gene editing tool called clustered regularly interspaced short palindromic repeats (CRISPR) can alter the DNA of human cells like a very precise & easy to use scissors. Further it was also found that CRISPR associated protein (CAS) 9 is a novel technology that is used to modify genes. The technique offers potential for modifying genes within cancer cells to inhibit their growth or enhance the effectiveness of existing treatments.²⁰⁻²¹

HOMOEOPATHIC APPROACH

The first approach of Homoeopathy is the miasmatic approach. Miasms in homoeopathy 'are the disease-causing dynamic influences that are infectious in nature'. When the cancer diathesis/indisposition starts with in the body, the miasmatic affection in the body is 'Psoric' as the disorder is at the functional level. When the cells multiply unnecessarily in the body and forms tumor inside the body, the miasmatic affection is 'Sycotic'. When it spreads to other parts of the body and destroys tissues, the miasmatic affection is 'Syphilitic'. Here, the homoeopath has to prescribe anti miasmatic medicines depending upon the prevalent miasm in the body.²²⁻²³

The homoeopathic medicines that are related to the nutraceutical 'R-Cu' are 'citrus decumana' in mother tincture (MT) and 'Cuprum Met-3x'. The doses can be 20 drops from the MT and 2 tablets from the other once a day. The MT is prepared from the grape fruit from which 'R' (Resveratrol) is derived and the other will provide the Cu or Copper in minute doses.²⁴⁻²⁶ The medicines that are related to the CAR-T cell therapy are 'Thymus', 'Zinc Met-3X', 'Echinacea', 'Alfaalfa', 'Sterculia', 'AIDS Nosode', 'Alcohol Sulphuris'.²⁴⁻²⁶ Similarly, drugs that are related to CRISPR are 'DNA', 'RNA', 'VAB' and 'Actea Racemosa'.²⁴⁻²⁶

The chronotherapy related medicines are those that ameliorate the complaints in general with particular time duration in 24 hours. For instance, 'Chelidonium', 'Merc Sol' & Zin Met ameliorate generally from 4am to 9am. Cancer patients who are better as a general symptom from 4am to 9am can take the remedies in more frequency during 4 to 9am. Drugs like 'Alumina', Lil T', Lyc ameliorate as a general symptom from 9am to 12 noon. For amelioration during 12 noon to 6pm, the drug is 'Sepia'. Homoeopathy has multiple remedies for all time zones in 24 hours.²⁴⁻²⁶

There are the drugs that act in all types of cancer. This condition leads to various complications in the body. The drugs are 'Arsenic', 'Carbo Animalis', 'Conium', 'Graphites', 'Nitric Acid'.²⁴⁻²⁶ Boericke's materia medica mentions drugs under cancer in the therapeutic index. The drug for bladder cancer is 'Taraxacum', for epithelial cancer the drug is 'Acetic Acid', for gastric cancer the drug is 'Geranium', the drugs for rectal cancer are 'Ruta', 'Hydrastis', 'Kali Cyanatum'. The drug for tongue cancer is 'Fuligo Ligni'.²⁷

Similarly, the drugs for all cancers are 'Sempervivum Tectorum', 'Arsenic', 'Hydrastis', 'Antim Chlor', 'Galium'. The drugs for cancer mammae are 'Asterias Rubens', 'Conium', 'Plumbum Iod', 'Carcinosin'. To relieve pains of cancer the drug is 'Euphorbium'.²⁷ For Cancrum Oris condition, the drugs are 'Secale Cor', 'Kreosote', 'Arsenic', 'Baptisia'.²⁷ Besides the potency medicines, the mother tinctures of Indian drugs can also be prescribed. It is also equally critical to keep the Bach flower remedy known as 'Rescue Remedy' as these patients can be saved from cancer complications as well.^{27,28}

The preventive & curative medicines like the Bowel Nosode 'Bacillus Number 7' can be prescribed for mental & physical fatigue. As cancer is related to overall nutritional status in the body, the bowel nosode "Gartner Bach" can be prescribed.^{29,30} As the entire process is of inflammation inside the body, anti-inflammatory medicines like 'Prednisone', 'Cortisone', 'Hydrocortisone'. 'Curcuma Longa' in potencies has to be prescribed. Besides the Morgan group of Bowel Nosodes can be prescribed as these are anti congestive.^{30,31}

Other specific medicines are 'Carcinosin' & 'Aurum Ars' in potencies.³¹ As per Murphy's Materia Medica, there are drugs mentioned in capitals under cancer in the medical repertory guide section of the book. These drugs that are to be given in potencies as well as in mother tinctures are 'Arsenic', 'Asterias', 'Bromium', 'Bufo', 'Cadmium Sulph', 'Carbo Animalis', 'Carcinosin', 'Conium', 'Cundurango', 'Hydrastis', 'Lappa A', 'Lycopodium', 'Nitric Acid', 'Ornithogalum', 'Phosphorus', 'Phytolaca', 'Scirrhinum', 'Scrophularia N', 'Silicea', Trif P'.³¹ Similarly, there are drugs mentioned under the rubric 'Scirrhus, cancer', the drugs mentioned in capitals are 'Carbo Animalis', 'Conium', 'Scirrhinum' & 'Silicea'.³¹

Similarly, under cancer, the drugs to check metastasis are 'Viscum Album' & 'Condurango' in Mother Tinctures. These drugs can also be given in potencies & as well as mother tinctures.³¹ For palliative care & complications arising due to chemotherapy there are separate drugs. For palliative care, drugs like 'Euphorbium', 'Morphine Aceticum', 'Chamomilla', 'Carbo Animalis' can be prescribed in potencies & mother tinctures as well.³¹ Cases having chemotherapy related issues, drugs like 'Cadmium Brom' & 'Radium Brom' can be prescribed.³¹ Similarly, the appropriate bio-chemic salt can also be prescribed from among the 12 body salts using the Phatak's repertory.³²

The lead author has already published an article on cancer & homoeopathy with the use of bowel nosodes. The therapeutic system has been offering solace to the masses suffering from cancer.³³ One of the major issues in the nation is very less screening. As there is very less screening, the burden of the disease can be gauged in a large country like India. This reflects the magnitude of the problem in the country from the perspective of NCDs as cancer is a NCD with an altered immunity in the body.³⁴

Currently, the crude death rate includes non-communicable diseases (NCD) deaths and this trend is catching up as NCDs have the upper hand than the communicable diseases (CD) as a result of epidemiological transition.³⁵ In India, Homoeopathy is the third preferred system of treatment after Allopathy and Ayurveda. About 10% of the populations depend on Homoeopathy for their health issues. Out of the 1300 million populations, 130 million use Homoeopathy for their health issues who consist of newborn to old age.³⁶⁻³⁷

Table 1: Cancer in India.

Epidemiology tools	Men	Women	Total
Number of new cancer cases	7,22,136	6,91,178	14,13,316
Number of cancer deaths	4,46,772	4,70,055	9,16,827
Number of prevalent cases (5 years)	1470047	1788471	3258518

CONCLUSION

Homoeopathy is and will be effective against all cancer cases in general as it takes care of not only the mental/psychological issues but also the internal inflammation as well. However, it should be also seen that along with constitutional/deep acting/polychrest Homoeopathic medicines, specific medicines & complications of cancer are also required to be dealt. Homoeopathic fraternity should cover the cancer cohort as the therapeutic system can cover the masses effectively, therapeutically, economically.

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