[OPINION] Cancer – Role of TCM in Treatment and Prevention

In 2000, Hanahan and Weinberg published a paper “The Hallmarks of Cancer” enumerating six acquired functional capabilities of human cells for progression into malignancies, which include sustaining proliferative signaling, evading growth suppressors, resisting apoptosis, enabling replicative immortality, inducing angiogenesis, and activating invasion and metastasis. These crucial traits have since been the guiding principles for the development of oncologic interventions.

The article was updated in 2011 to include two new hallmarks, reprogrammed metabolic pathways and evasion of immune destruction, and two enabling characteristics, genome instability and tumor-promoting inflammation.

In yet another revision by Hanahan in 2022, two more new functional traits, unlocking phenotypic plasticity and senescent cells, and another two enabling characteristics, non-mutational epigenetic reprogramming and polymorphic microbiomes, were further identified.

From six hallmark properties to 14 key traits, the already intricate tapestry of cancer development has been expanded in complexity to encompass more vivid details, giving us a renewed perspective of how cancer cells sustain their growth advantage. Indeed, the pace of knowledge acquisition and consolidation within the last two decades demonstrates how much man knows and does not know about this dreadful disease.

This trend of intensive discovery is unlikely to abate as scientists will continue to identify new pathways by which cancer cells engage to circumvent existing measures that we institute to arrest their growth. Not to mention cancer cells are already adopting multiple-pathway and pathway-switching strategies to surmount barriers that impede their unrestrained proliferation.

This implies that even if we successfully put the brakes on cancer growth, the likelihood is transient, as we are merely chasing the elusive tail of the cancer demon. Tumor heterogeneity, arising from divergent evolution of the originating cells’ progeny, often results in genomic instability that fosters genetic diversity of multiple genomic clonal populations within a neoplasm. And this is the underlying cause of drug resistance and disease relapse that makes most therapeutic interventions palliative rather than curative.

Tumor heterogeneity also causes setbacks in cancer detection in that a biopsy, the basis upon which a therapeutic choice is predicated, may capture only a fraction of tumor cells that are non-representative of the whole tumor.

To get ahead of the curve, we therefore need “living solutions” that revive the body’s immune prowess as in CAR-T therapy. Only then may we declare “radical remission” in cancer patients.

Hang on. Did we just mention the collaboration of a resilient host immune system as a response to the quest of enduring cancer treatment? It appears that we have come full circle in seeking a host-dependent mechanism for the treatment of this disease.

Strictly, this call should not be a realisation arising from some new development but the bedrock for any cancer therapy. And perhaps this is where TCM oncology could meaningfully complement contemporary medicine for the benefit of cancer patients.

Let us examine how and why an East-meets-West partnership could work synergistically and seamlessly to produce superior results. The golden rule of any stable alliance is the avoidance of clear and present internal conflicts by contributing parties having common goals and beliefs, and complementary but non-competing skills that each party plays to its strength.

Contemporary medicine has an ever-increasing arsenal of weaponry to combat cancer in a capricious and less-than-predictable pathological landscape. These tools, though formidable and able to stop cancer growth in its tracks, could lose efficacy after a period of use. These interventions are excellent during aggressive stages of the disease and in fact, any stage of cancer so long as the general health of the patient remains intact.

However, some patients for reasons of deteriorating health conditions or are not able to tolerate the harsh adverse effects of these therapies, may be forced to defer treatment indefinitely after some time. Such hiatuses are doubtlessly dysfunctional to the treatment regime and detrimental to the patient especially when cancer cells remain active within the host.

So therapeutic options from contemporary medicine bear tremendous strength in that they elicit rapid response but may take a toll on the patient’s general health. There could also be occasions when the disease was brought under control after treatment but the patient was left vulnerable to other pathogens.

This brings recollection of an NHK documentary that featured an assistant professor of surgery from a reputed Japanese university hospital who referred his post-surgical gastric cancer patient who was anorexic, emancipated, and non-ambulatory to a Kampo medicine practitioner for treatment. The patient was able to eat his favorite udon and literary “walk in the park” after a course of herbal treatment. And no prize for making the right guess. The prescription was none other than the prosaic “Six Gentlemen Decoction六君子汤 ”, a TCM prescription from the Han Era.

As a healing discipline, TCM's major shortcoming is its lack of focus at the disease level resulting in a forfeiture of specificity in its curative framework. Be that as it may, in this ostensible weakness lies TCM's greatest strength. With therapeutic effort being directed at the patient instead of the disorder, TCM provides patients with balanced, moderated but holistic treatment instead of potent solutions fixated narrowly on the disease.

Consequently, uplifting the well-being of the patient is prioritized over defeating the disease, which means TCM treatment outcome is no longer a binary event of win-lost but possibly a state of peaceful coexistence with the disease与癌共存 as a last resort.

TCM's unique therapeutic perspective has shaped the development of debilitation recovery 补虚 as a distinctive forte across all its treatment modalities. Debilitation is not viewed as a single point of failure but instead regarded as a state of imbalance among five lateral and interrelated organ systems by the Five Elements Concept. This central dogma provides not only a reference for diagnosis but also a plethora of different healing permutations that dynamically change with the patient's condition.

Orthodox medicine's cancer treatment, based on a philosophy of swiftly devastating constructive destruction, when combined with TCM's forte in debilitation recovery produces astonishing results far beyond the expectations of clinicians and patients. The exploration of PHY906 published in "Frontiers in Pharmacology" is a case in point. For more than a decade, PHY906 has proven to enhance the therapeutic indices of a broad spectrum of anticancer agents.

These findings are derived from clinical studies for colorectal, liver, and pancreatic cancers when PHY906 is used as an adjuvant to chemotherapy with promising results. In another 2021 article published by Nature, YIV-906 (aka PHY906) potentiated anti-PD1 action against hepatocellular carcinoma by enhancing adaptive and innate immunity in the tumor microenvironment. Liver cancer remains one of the most lethal, complex, and difficult-to-manage cancers.

Indeed, PHY906 reduces chemotherapy-induced toxicities and/or increases chemotherapeutic efficacy without affecting the pharmacokinetics of the chemotherapeutic agents used. So, what is PHY906? It is a pharmaceutical grade Huang Qin Decoction 黄芩汤, a TCM formulation comprising four distinct herbs developed some 2000 years ago.

These are some examples of how TCM could well be integrated into mainstream medicine for cancer treatment with positive outcomes. On the broad front, the deployment of TCM in conjunction with modern medical treatment could serve the following objectives over the course of therapy:

1. At the neo-adjuvant stage – prepare the patient for mainstream treatment by improving the patient's overall health condition through elevating immunity, rebalancing the vital fluids, invigorating the Qi levels, and ensuring adequacy of blood.

2. During the adjuvant stage – ensure that the patient maintains a "treatment-worthy constituent" throughout the regime by mitigating adverse effects of the orthodox treatment, enhancing the efficacy of orthodox treatment, de-escalating chronic inflammation, and boosting immunity level.

3. Post-treatment period before remission – minimize the incidence of relapse by providing maintenance dosing to boost patient's immunity aside from passive surveillance and reviews

4. During the palliative stage – promote "coexistence with cancer" by improving the quality of life and extending the lifespan of the patient.

Conceptually, this East-meets-West alliance appears to be a marriage made in heaven, except in clinical settings the parties seldom communicate to confer on patients' conditions and disease progression. In reality, the patient is left with the role of matchmaker for the "virtual marriage". How then should the patient with the most vested interest among the parties decide on the choice of partners when he elects integrative cancer healthcare?

Because cancer is almost always diagnosed in acute healthcare centers, a cancer specialist team is usually assigned to the patient based on medical findings. The real task of the patient is therefore to identify the TCM counterpart who has the experience and expertise to at least hold a meaningful conversation with the specialist team, which implies that the TCM counterpart must at least possess a working knowledge and understanding of modern medicine, especially in the fields of immunology and cancer biology. And how would a layperson validate this professional quality?

Without having the benefit of observing how the potential candidate interacts with the specialist team, the patient could without demand produce all his pathological reports, radiological investigation reports, laboratory test reports, and discharge reports for an initial consultation with the TCM practitioner.

If the TCM clinician decides that these reports are of little relevance, then there is no basis for the patient to expect integrative cancer healthcare. Otherwise, the patient should seek a detailed interpretation of these reports that bears context and consistency to the big picture of the patient's condition. However, when such a commentary is not forthcoming from the practitioner, it

would be prudent for the patient to seek a second opinion on any major recommendation from the practitioner's office.

The legacy of cancer predates human evolution and stretches back hundreds of millions of years. Hard-wired into the making of mankind, cancer is therefore here to stay. Its footprints have however been more distinct in recent centuries due to the increased lifespan of the human species. Statistical extrapolation demonstrated that anyone living beyond age 140 shall very likely be afflicted with cancer. Notwithstanding, modern science has made promising advances against this dreadful and elusive disease by "rejuvenating the immune system". Yes, remember the photocopier analogy in our introductory segment? Ultimately it is back to "refurbishing the machine".

But why wait for the machine to fail before acting? And why not preventive maintenance? There are at least two plausible and painless ways that one may adopt to minimize the incidence of or defer cancer affliction – by maintaining a positive outlook in life and "turning back the biological clock".

It has been scientifically proven, at least in murine models, that increasing the happiness factor can help beat cancer by elevating the dopamine levels in the body. And for "turning back the biological clock", look no further than towards TCM, the purveyors of longevity, for an answer.

We have reached the end of our Cancer Series. I hope I have delivered the promise of keeping the discussions succinct and simple but, most important of all, entertaining enough to keep the interest of readers alive. Thank you for listening in.

The TCM Oncology Unit within the PULSE TCM Clinic Group provides complimentary consultation by appointment only and on a "without prejudice" basis provided that any such discussion shall not exceed 30 minutes or within the context of a single medical report. Consultation is available at PULSE TCM.

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