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The Bottomless Medicine Bottle

Thoughts on the natural law of synergy

NATUROPATHS emphasise that optimum health can be achieved only by following the laws of nature. One of the first things I remember being taught as a student was the law of homeostasis, which I have always referred to since as the "First Law of Nature". This is the innate ability of living organisms to maintain equilibrium with their environment, and to initiate responses that enable them to repair themselves, provided they have access to the necessary raw materials. When homeostasis, or equilibrium, breaks down disease ensues.

When I see patients with chronic disease, sometimes of many years duration, my initial observation is that homeostasis has broken down. There may be irreversible pathology, but most commonly the problem is that the laws of nature have been transgressed with the result that the disease is mainly functional.

To return the patient to health may be just a case of supplying a missing ingredient, such as an essential nutrient, or perhaps it is a single structural manipulation that is required. But most frequently the whole spectrum of naturopathic therapeutics needs to be employed.

This combination of modalities is what might be termed the holistic approach. The treatment programme may, for example, include an exercise programme, detoxification, attention to diet, posture, breathing, and exposure to fresh air and sunlight.

What I think is of interest is that by employing several lifestyle modalities all at once there is a much greater chance of therapeutic success, because the natural law that is being utilised is a *Positive Synergism*...i.e. the combined effect of the treatment modalities is greater than the sum of their individual effects.

Negative Synergism

There is also a natural law of *Negative Synergism*.

This comes into play where an individual presents with several risk factors to their health. Thus a combination of risk factors, such as obesity, smoking, lack of exercise, increases the risk of disease more so than when individual risk factors are assessed individually.

Synergism has been a principle of medicine and healing since time immemorial. The herbal formulae used by practitioners of Traditional Chinese Medicine, dating back centuries, may contain more than 20 agents. One almost needs a bottomless medicine bottle in which to put all the remedies.

Both conventional medicine and Western herbal medicine also use combinations of agents. Conventional doctors frequently use combinations of anti-hypertensives, antidepressants, antibiotics, and chemotherapy agents to achieve their therapeutic goal. By combining two anti-hypertensives the resultant lowering of blood pressure is greater than if either of the anti-hypertensives were used on their own.

It is believed that the synergism achieved is due to an actual interaction between the various agents being used. Although this sounds simple, it is difficult to measure, and, as yet, there is no agreed scientific formula for it.

When two agents are used in combination the interaction can be complex with a dozen or so physiological reactions taking place in addition to the interactions between the compounds. With three agents the interaction becomes even more complex.

Over-the-counter herbal medicine mainly focuses on the use of single herbs, for example, ginkgo, echinacea, saw palmetto. But even when a medicine contains only one herb there will still be a complex interaction between the dozens of compounds that it contains.

Western medical herbalists, like TCM practitioners, tend to use combinations of herbs in their prescriptions. Apart from synergism, an advantage of using combinations of herbs is that one increases the desired action, but reduces undesirable effects. In *Potter's New Cyclopaedia of Botanical Drugs and Preparations*, there is a traditional formula known as the Swiss Purgative. This contains equal parts of 20 herbs, of which three are now no longer recommended for internal use, or have possible adverse effects...i.e. Germander (which may cause liver disease), Arnica, and Coltsfoot. However, when each undesirable compound is diluted by being mixed with 19 other herbs the possibility of an adverse effect will be much reduced. An argument against using a lot of herbs in combination is that their therapeutic effect must be diluted, but up to a certain number of herbs this doesn't appear to be the case.

Research into integrated medicine has found that Synergism also occurs with the anti-cancer effects of vegetables. An in vivo study of tomatoes, broccoli and lycopene revealed that when tomatoes and broccoli were given alone they reduced tumour growth by 24 and 42 per cent respectively, while lycopene alone reduced it by only 7-18 per cent. When tomatoes and broccoli were given together they reduced tumour growth by 52 per cent (Canene-Adams et al, 2007 in Integrative Oncology).

The idea of employing the natural law of Synergism in naturopathic oncology has taken a step forward with the realisation that by using combinations of plant compounds one might achieve a greater therapeutic effect in cancer treatment with a reduced likelihood of toxicity.

A comprehensive review of the work in this field has been published by John Boik, author of *Natural Compounds in Cancer Therapy*. He suggests that the optimal combinations might contain 15 to 18 natural compounds, whereas conventional chemotherapy combinations tend to be no more than about five.

At present the dosages of single natural compounds, for example green tea, would need to be excessive and may even be toxic to achieve a positive chemotherapy effect, but used in combination with other natural compounds the dosage could be reduced, and still achieve a positive therapeutic effect.

Boik states that there is documented evidence already that synergistic interactions occur with combinations of direct-acting natural compounds, both from in-vitro studies and animal studies.

This is quite exciting as it confirms what some practitioners have found in practice – that by combining remedies as well as lifestyle therapies, the prognosis for cancer patients can be significantly improved. The mistake that may have been made over many years of “miracle” cancer cures, such as laetrile, is an over-reliance on one remedy or treatment to cure the disease. Although there are claims that laetrile and other cancer remedies may be successful in individual cases, the overall experience of most practitioners is that these treatments mostly fail.

A current emerging consensus is that there is a cluster of pro-cancer events required to trigger induction of the tumour process. Therefore, one requires a combination of compounds that will target all of these events all at once. Fortunately, the research on the many natural compounds available shows that most of them target more than one of these events. For example, Curcumin, the yellow dye in Turmeric, is one notable compound that targets several pro-cancer events, but also acts synergistically with other natural compounds. I believe that using natural remedies and treatments synergistically instead of sequentially (i.e. when one remedy fails try another) is a reason why naturopathic methods are frequently successful in chronic disease compared to the standard conventional approach. This is an area that is being currently researched in naturopathic oncology.

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References available on request