

A Constitution Dependent Digital QOL Assessment

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Abstract

According to the reports from Ministry of Health in each country, the average life span was expanded over the past century. This trend is expected to be extended further in the future and at the same time continuous efforts should be made. That indicates that the quantitative objective, as one of the objectives people have aimed at since ancient times to attain the perpetual youth and longevity, are almost achieved in this way. However, as the next objective, it is necessary for us to be concerned about improving the more advanced quality of life.

In an effort of improving the quality of life, other than the western medicine, we have attempted to bring many traditional medical practices, including the Oriental medicine, from various parts of the world into the medical field as alternative medicine. Judging both positive and negative aspects by the evaluation standard of the Western medicine, we try to obtain numerical values of QOL, and after that, set a numerical target for improvement of QOL.

Some methods of alternative medicine taken in this review are acupuncture moxibustion, Chinese medicine and other traditional medicine. Above all, WHO suggests selecting the suzerain nation of acupuncture moxibustion, which has been developed in the Oriental countries and realized as a specialized cure, by raising good and bad points and ascertaining which nation advocating the best modeling method could be. At the moment for evaluating CAM, for example, what kind of methods is/are suitable for evaluating each CAM. We have been trying to propose the peripheral leukocyte is one of the best way for evaluating CAM. Our trial are hot spring hydro therapy, acupuncture and moxibustion, light exercise and undle heating. In these evaluations, we found the common results from leukocyte effects which exhibited strong correlation for the regulation. The contents are the result from the data showing the much in number tend to downly regulate, on the other hand lower number one is up-regulated. This kind of regulation showed within a 24 hours, for the leukocyte subsets, granulocyte and lymphocyte are changed under circadian rhythm. So, for purpose of evaluating leukocyte deviation, we set the point for evaluation at the same-time zone from the first set of evaluation. Under these condition we got a same results reproductively that the whole number of leukocyte, and its subset, granulocyte and lymphocyte also regulated within a 24 hours. This kind of phenomenon is the case that we confirm a lot of kind of CAM and repetition. However, the life span of leukocyte are at lease 3 - 4 days and no such a drastic apoptosis was induced such a stimulation. For the purpose of scientific explanation, we proposed that the emotional hormone are concern this change of leukocytes population. For the results of this hypothesis, there were reasonable change were seen in the peripheral blood about emotional hormone, adrenaline and dopamine. Other hormone concern thyroid grand was not changed significantly. In this review, we plan to collect evidence and judge them with the content suggested in the case of CAM. In other words, as a judging standard, setting immunologic factors as main items, we will judge superior and inferior of methods of each country. Recommending not only quantitatively, but also qualitatively to evaluate "balance of the lymphocyte which is the associate of the white blood corpuscle and the polymorph" as a standard of the alternative medicine in the concept of this international medical magazine.

Keywords: QOL; Constitution; Emotional Hormone; Leukocyte Subset; Immunological Factors

Abbreviations

CAM: Complementary and alternative medicine, beside the western medicine, there are many traditional medicine and/or health promoting menu all over the world; CD: Cluster of Differentiation. Each lymphocyte has name that expressed CD number, for example CD2, CD4, etc.; Emotional Hormone: Adrenaline, Dopamine and Cortisone were selected as emotional hormones for this report; FCM: Flow Cytometry; G-rich type: The individual that exhibit over 60% of granulocyte in peripheral blood, finding many in young gentleman might be kept warm around the nee but the Head kept rather cool; L-rich type: The individual that exhibit over 40% of lymphocyte in peripheral blood, finding lot in ladies and senile; Met(s): Metabolic Rate (s); MHC: Major histocompatibility antigen; Self marking constructions that express almost all the cell surface. Immune response can start with coincides of same MHC. Tumor cell and virus-infected cell lose this MHC that can attacked by tumor cell and virus-infected cell; QOL: Quality of life, the main topic of this article necessary to prove by analog system to digital one; Undle Heating System: Traditional rom heating system in North Korea and North East Area of Mainland China. The warmed air was guide into the living under the floor. The room condition; VAS: Visual analog scale, the main but old style of assessment in QOL

Introduction

The urgent need for QOL assessment with digital words

The recent excessive commercialization is particularly confusing for patients and doctors who seek remedies for heretofore undefined symptoms. Furthermore, since these treatments have not undergone strict testing, they are not always safe and the same drug may have different effects according to the individual patient and dosage. Complicated considerations are necessary for the application of practices such as those found in Chinese traditional medicine.

Recently, alternative and complementary medicines together with oriental and traditional medicines have attracted much attention. This new interest includes aromatherapy and herbal medications, acupuncture, moxibustion and yoga [1-7].

However, these therapies have not been well defined. Some are simply based on legend or belief while others are traditionally applied but without scientific evidence. Then the assessment of each therapy and remedy need for their capacity through a scientific methods especially developed by Western Medicine. Although the word Alternative and Complementary Medicine is not popular enough in Japan than US and European countries, because in oriental countries so called Alternative and Complementary Medicine in Europe and north America is authorized medicine but not alternative one in the long histories in the world. Here I would like to introduce you where the alternative and complementary medicine now in Japan as well as in each country in the world and where should it be going in the future (Figure 1).

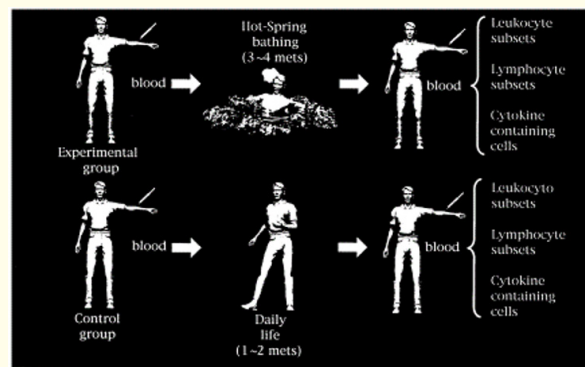


Figure 1: General experimental design to evaluate each CAM therapy. General style for the experiment was designed to collect factors before and after the CAM menu. However, the impotent sings to collect the factor have to keep the time lag is 24 hours in order to avoid the circadian rhythm. Twenty-four hours change of leukocyte counts on the bases of group comparison between pre/post therapy. We sampled peripheral blood from each volunteer before and after CAM therapy, at the same time on each day, in accordance with the consideration of circadian rhythm of leukocyte in this figure, we tried to show the date simply pooled and make mean, then compared.

The best scale for QOL assessment to the medicine in east and the west

The Alternative and Complementary Medicine Society defines alternative and complementary medicine “the modern Western medicine which has not been verified scientifically and practiced at the daily clinic.” In the U.S., it is called the alternative medicine or CAM. Anyway, it is the medicine that is not lectured at the medical school and practiced at the daily clinic.

The medicine can be classified into either the conventional medicine or the unconventional medicine. The conventional medicine is also called the modern Western medicine, scientific medicine or technical medicine, and the unconventional medicine is called the alternative, complementary, natural or fringe medicine. In Japan, the alternative medicine contains the traditional Chinese medicine, acupuncture and judo reduction etc. established as the Eastern medicine and they have their own independent long history. Since the herbal medicine is not insured in Japan, some insist it is not belong to the alternative medicine. However, it is considered as alternative medicine in the West. Thus, the position of the alternative medicine is various, so it might be recognized uniformly.

There are many kinds of medicine including Ayurvedic Medicine in the world, therefore it is not many who can receive benefit from the Western medicine like us in Japan. The World Health Organization classifies 65 ~ 85% of the world health control business into the “traditional medicine”. In other words, if these traditional medicines are practiced in the West, it is classified into the alternative medicine. The medicine practiced in today’s Japan is called the Japanese medicine, and it is thought as one of the Far Eastern medicine like Chinese medicine, Tibetan medicine and Korean medicine.

Simple Sum-up and Make Mean Fade out the Important Changes, in a system Double/Single Blind and Cross Over

There are many experimental system for evaluating QOL on the basis of western medicine. Almost all the experimental protocols are recommended to double blind and cross over system as a better evaluating system. However, simple sum up and make mean for comparison of efficacy before and after the administrating some menu. Our evidence from light exercise, walking, hot spring hydrotherapy etc., we had no result by the method, making summing up and make mean in all the menu of CAM. For at least three type of individuals that responded to up-regulation, down regulation and no changed one. So simple summing up is cancelled the each vector of individual. The X-axis according to the value before each CAM menu. As shown in the figure 2, the data could represent by linear slant. The value correlation/tangent was represent the each result from CAM menu/walking. We tried to compare the best impact for each individual, we set up two sort of impact. The one was walking 4 km/hour (4 mets), and the other was 8 km/hour (8 mets) to the same volunteer at the different day after the cooling off from the former menu [8-13].

In order to establish some effect from each designed experiment, one usually recommended to make experimental system as double blind and crossing over system. Hot Spring Hydro Therapy Regulate Peripheral Leukocyte Together with Emotional Hormone and Receptor Positive Lymphocytes According to Each Constitution/Condition is important to conscious of circadian rhythm. Abo re- ported that it was possible to sort the constitution, granulocyte-rich individual and lymphocyte-rich one with the peripheral leukocyte (Figure 2 and 3).

Each population of subset is depending on a circadian rhythm. Within a same individual, granulocyte increase in the daytime, on the other hand, lymphocyte increased in the nighttime in a cycle 24 hrs. So, we have to compare the effect of each menu for the peripheral leukocyte on the same time before and after the menu [4-9].

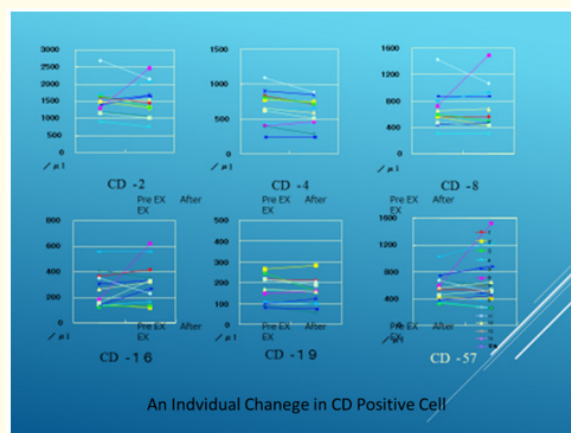


Figure 2: Simple and conventional presentation of the effect by walking, 4 mets. We first got the data from leukocyte regulation from 24 hours interval. But there were many constitutional difference. For example, up-regulated group, down-regulated and no-changed group. So, in this presentation style, simple sum-up and make mean got the result as no change from this figure.

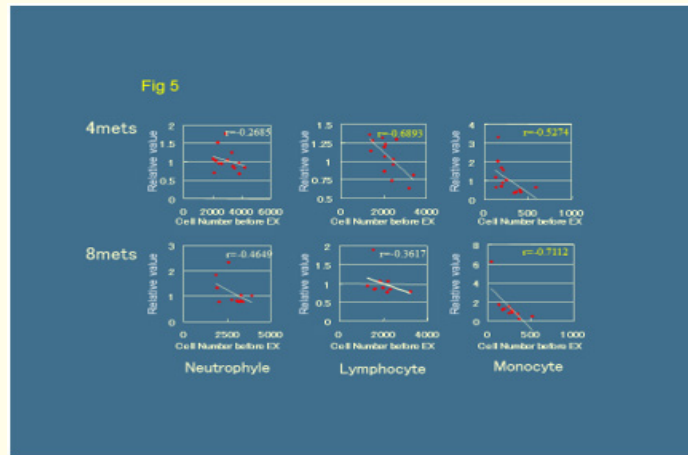


Figure 3: The constitution/condition dependent regulation and presentation by linear slant and judging by their tangent value/co-efficiency. A graphical presentation for the summary of the hot spring hydrotherapy. We tried to express the effect of peripheral total leukocyte number by individual level of change and plot in the X-axis as in each age. Variations in leukocyte subpopulations in the peripheral blood before and after each CAM therapy.

Proposed standard for QOL assessment

Physiological super system: Immunological network

The immune system shares with the nervous system at least two characteristics. The young individual is born with a certain potential to learn and to react to numerous and varied environmental stimuli both systems can lean. Once information is learned by the immune and nervous systems, it becomes in a sense imprinted, and each system retains the information in varying degrees, a process defined as memory. Despite the intense learning that young systems must do subsequent to birth and will continue to do throughout their life time, infants are born into the world with certain innate behavior patterns controlled by the nervous system, and certain innate or characteristic natural immunities. Innate or natural, immunity includes all non-specific resistance or specific immune responses [14-18].

The urgent need for alternative and complementary medicine nowadays in all over the world

Recently, alternative and complementary medicines together with oriental and traditional medicines have attracted much attention. This new interest includes aromatherapy and herbal medications, acupuncture, moxibustion and yoga.

However, these therapies have not been well defined. Some are simply based on legend or belief while others are traditionally applied but without scientific evidence. Then the assessment of each therapy and remedy need for their capacity through a scientific methods especially developed by Western Medicine. Although the word Alternative and Complementary Medicine is not popular enough in Japan than US and European countries, because in oriental countries so called Alternative and Complementary Medicine in Europe and north America is authorized medicine but not alternative one in the long histories in the world [19-28]. Here we would like to introduce you where the alternative and complementary medicine now in Japan as well as in each country in the world are and where should it be going in the future (Figure 4).

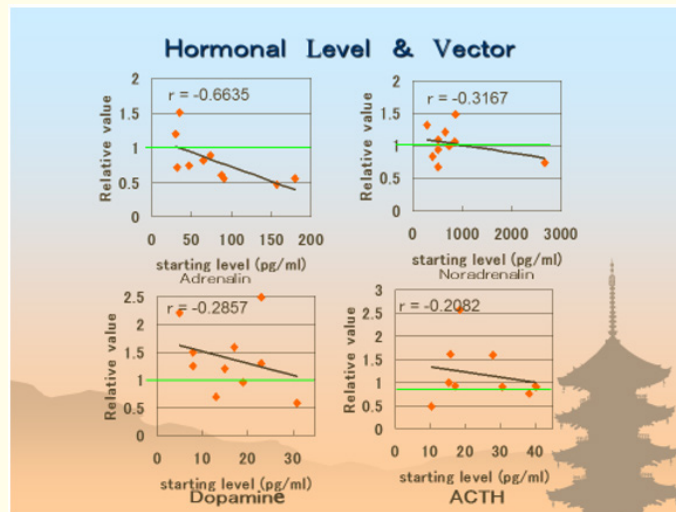


Figure 4: An emotional hormone also regulated by CAM therapy. The constitution dependent analysis for (adrenaline and dopamine). Each spot were obtained from the calculation comparing relative value from before and after levels in the serum, catecholamines levels in the peripheral blood within the figure, adrenalin and dopamine were regulated as was the same in leukocyte regulation. The clear slant was made from the data especially, in regulation in adrenalin, overall trend was decrease but was dose dependent manner of the value the day before. Also, dopamine was increased but also dose dependent manner as slant making.

What is the alternative and complementary medicine in the east and the west?

The Japanese Alternative and Complementary Medicine Society defines alternative and complementary medicine “the modern Western medicine which has not been verified scientifically and practiced at the daily clinic”. In the U.S., it is called the alternative medicine or the Complementary and Alternative Medicine (CAM). Anyway, it is the medicine that is not lectured at the medical school and practiced at the daily clinic.

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Alternative and complementary medicine in future

As we here took an overview about the today's alternative and complementary medicine, I think it is high time this medicine should be standardized uniformly and Japan could play an important roll in this task [34-37].

In Japan, the Eastern Medicine especially the herbal medicine (Kampo) was once the central medical care for long time until the Meiji Government decided to import the Western medicine as the ordinary medical care. Thus, in Japan not only the Western but also the Eastern medicine could have been developed, and Japan now takes great pride in the longevity. This is why we suppose Japan should take the initiative for the standardization of the alternative and complementary medicine.

The problem is how it should be standardized. Here we would like you to propose something. Most of the alternative medicine works through affecting the regularly system inside the body. For example, recent studies revealed the herbal medicine caused the interaction between the immune system, the endocrine system and the nervous system. Therefore observing the immune system by like sampling the peripheral blood might be an indicator for the standardization of the alternative medicine. Due to the above difficulties, this realm of medicine has often been shut out of the serious journals of western medicine. A new Journal concerning around complementary, alternative and traditional medicine" will be launched in a desire to ameliorate this situation, by encouraging the publication of original scientific papers based on sound scientific guidelines, but without prejudice against the possible efficacy of these new and ancient treatments.

Immune componce as a QOL factors

Non-granular leukocytes

Man, other complex vertebrates, and even many invertebrates have evolved a system of internal transport for communicating components of the immune system. It is the blood, within the circulatory system, that executes these tasks. The blood contains two major types of cells: erythrocytes, or red blood cells, and leukocytes, or white blood cells. Leukocytes play important roles in the immune system. There are two basic types of leukocytes: the non-granular and the granular. The non-granular (agranular) leukocytes are further divided into two types: lymphocytes and monocytes.

Lymphocytes possess antibody receptors for antigens on their surfaces and are thus vital to specific immune response throughout the entire body, where they freely move about. Monocytes are produced in the bone marrow, but like other blood cells they are eventually found in the blood. They frequently exhibit amoeboid movement, and they are voracious phagocytes when they enter connective tissues as macrophages from the blood. Both are important for quick, on the spot, phagocytosis [36,37].

Granulocyte/granular leukocytes

Granular leukocytes include neutrophils, eosinophils and basophils. The number of neutrophils increases in infections; neutrophils are not neutral at the sidelines but provide the first line of defense against invading foreign bodies and organisms. In allergies and parasitic infestations, the number of eosinophils increases. Basophils are important for the production of histamine, the primary cause of skin reactions in allergic responses. The "most phagocytic" of white blood cells are neutrophils and monocytes. This phagocytic property is largely manifest in the connective tissue. Both cell types ingest foreign particles, bacteria and degenerating cells and fragments, and are thus crucial to the body's non-specific immune reactions. Such responses involve rapid elimination of foreign material and antibody is not necessarily involved. This is one feature of man's immune system that is traceable in evolution to single-cell amoebae [38-41].

Phagocyte, augmentation of subcutaneous macrophage

Phagocytosis, the process of ingesting foreign material, is a non-specific immune reaction without the usual aid of specificity accompanying immunoglobulin or antibody synthesis. Macrophages and neutrophils will engulf almost anything (they are not as discerning as lymphocytes). To verify the presence of phagocytic cells one need only inject an animal with carbon particles, and shortly

thereafter phagocytes are blackened, heavily engorged with the ingested particles. Phagocytosis can contribute significantly to an animal's resistance to infectious organisms. When the macrophage engulfs antigen (e.g. foreign particles or infectious organisms) it is then ready to be processed, setting in motion a chain of events that begins a specific immune response. That processed antigen is somehow made "palatable" to sensitized lymphocytes, some of which then differentiate to plasma cell specific for that antigen. With another physiological function, macrophage respond wax substance that is composed in tuberculin bacilli, difficult to digest in his cytoplasm. When he meet this substance, he tried to his bet for digestion, resulting many kind of cytokine for surrounding. This condition lead to accelerate the dynamic for his subcutaneous. In such mechanism, solubilized wax substance promote skin turnover, some kind of cosmetics for lady [35].

Conclusions

The conclusions were as following,

- 1) QOL have to be explained by digital words not by analog one.
- 2) Possible scale is immunological factor including complement.
- 3) Simple sum-up and make mean fade out the constitutional change.
- 4) Constitutional change was explained by coefficient dependent factor (Figure 3).
- 5) Emotional Hormone also important scale for CAM assessment.

Conflict of Interests

No conflict of interest hit in this issue.

Contribution of the Script

The first author Nobuo Yamaguchi had been conducted to find digital presentation of each CAM trial, hot-spring hydrotherapy, Light exercise/walking by both 4Mets and 8Mets, Acupuncture, herbal decoction orally, aromatherapy and floor heating.

Hisako Izumi had prepared this script both writing and drawing the figures.

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