



THE ROLE OF FUNCTIONAL MEDICINE ON WHOLISTIC CARE APPROACH OF COVID-19 DURING PANDEMIC AND POST PANDEMIC ERA

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ABSTRAK

Tenaga Kesehatan dan Masyarakat harus mendapat informasi yang benar tentang Virus SARS-COV2, penyakit yang menyebabkan Covid-19, dan bagaimana penyebarannya. Termasuk epidemiologi, virologi, dan pencegahan yang dilaksanakan dalam Program Kesehatan Masyarakat melalui 5M, Mencuci tangan, menggunakan masker, menjaga jarak, membatasi Kerumunan, membatasi Mobilisasi dan Interaksi, serta 4T (Testing, Treatment, Tracing, dan Tracking), Fencing (Isolasi dan Karantina), Vaksinasi (Biologi, Sosial), dan Imunologi. Konsep fungsional medicine adalah sistem penanganan pasien untuk tenaga kesehatan yang digunakan untuk membantu pasien dan praktisi kesehatan bekerja sama untuk mengatasi penyebab mendasar dari covid 19. FM menggabungkan ilmu genetika terbaru, system biologi, fisiologi, dan pemahaman bagaimana lingkungan dan faktor gaya hidup mempengaruhi munculnya dan perkembangan Covid-19. Patofisiologi covid-19 membangun akar penyebab covid-19 yaitu badai sitokin, inflamasi, dan koagulopati. Pendekatan berbasis sistem FM dan peran pendekatan holistik FM perawatan covid-19 dengan manajemen klinis yang direkomendasikan berdasarkan mekanisme aksi dengan nutrisi, nutraceutical, natureceutical, modifikasi gaya hidup pada peradangan kronis covid-19, seiring dengan peningkatan imunologi dengan vaksinasi.

Kata kunci : SARS-COV2 (Severe Acute Respiratory Syndrome Coronavirus 2), F.M (Functional Medicine)

ABSTRACT

Health Professionals and Public must be well informed about the SARS-COV2 virus, the disease it causes Covid-19, and how it spreads. Including the epidemiology, virology, and prevention its implementation in the Public Health Program through 5M, Mencuci tangan (Wash hands frequently), mengenakan masker (wearing mask), menjaga jarak (Distancing), Menghindari Kerumunan (Avoid Crowd), membatasi Mobilisasi (limit mobilization & Interaction), 4T (Testing, Treatment, Tracing, and Tracking). Fencing (Isolation dan Quarantine), Vaccination (Biology, Social), and Immunology. The concept of Functional Medicine is a personalized system oriented model for healthcare that empowers patient and practitioners of health by working in collaboration to address the underlying cause of covid 19. FM incorporates the latest genetic science, system biology, physiology, and understanding how environmental and lifestyle factors influence the emergence and progression of covid-19. The pathophysiology of covid-19 is finding the root causes of covid-19 which are the cytokine storm, inflammation, and coagulopathy. A system based approach of FM and the role of FM wholistic approach care to covid-19 with recommended clinical management based on mechanism of action with nutrition, nutraceutical, natureceutical, lifestyle modification on chronic inflammation in long covid, along with increases the immunology with vaccination.

Key words: SARS-COV2 (Severe Acute Respiratory Syndrome Coronavirus 2), F.M (Functional Medicine)

INTRODUCTION

Health professionals and the public must be well informed about the SARS-COV 2 virus, the disease it causes (Covid-19), and how it spreads at this time, there are no uniformly successful treatment for covid-19. This review article will be to assess the scientific plausibility of promising prevention approaches and therapeutic (neutraceutical and nutraceutical) interventions and then to offer clinical recommendations with respect to interventions, the practice of functional medicine emphasizes the primacy of safety validity and effectiveness.



PEMBAHASAN

1.1. Covid-19: Epidemiology, Virology, and Prevention

Coronavirus are important human and animal pathogens. At the end at 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, Hubei province of China.¹ It rapidly spread, resulting in an epidemic throughout China and a global pandemic. In February 2020 the World Health Organization designated the disease covid-19, the virus causes covid-19 is designated severe acute respiratory syndrome coronavirus 2 (SARS-COV2).²⁻⁸

1.2. Virology

Coronavirus virology-Coronavirus are enveloped positive to stranded RNA virus, is a beta coronavirus in the same subgenus as the severe acute respiratory syndrome (SARS) as well as several bats. Subgenus SARS middle east respiratory syndrome (MERS) virus the host receptor for SARS-COV2 cell entry is the same as for SARS-COV, the angiotensin converting enzyme 2 (ACE2) through the receptor binding domain of its spike protein (figure 1). The cellular serine protease (TMPRSS2) also appears important for SARS-COV2 cell entry.⁹

1.3. Variants of Concern

SARS-COV2 evolves over time most mutations in the SARS-COV2 genome have no impact on viral function. Certain variants have garnered widespread attention because of their rapid emergence within populations and evidence for transmission or clinical implications; these are considered variants of concern. Early in the pandemic, a study monitored amino acid change in the spike protein of SARS-COV2 included in a large sequence database identified a D614G (glycine for aspartic acid) substitution that became the dominant polymorphism globally over time.¹⁰⁻¹¹ Viruses bearing the G614 polymorphisms demonstrate higher levels of infections virus in the respiratory tract enhanced binding to ACE-2. and increased replication and transmissibility compared with the D614 polymorphism.¹²⁻¹³ The G614 variant does not appears to be associated with a higher risk of hospitalization¹¹ or to impact anti-spike antibody binding.¹⁴⁻¹⁶ It is now present in most circulating SARS-COV2 lineages including the variants of concern listed below.

Alpha (B1.1.7 Lineage) first appear in the UK in late 2020, a globally dominated variant, until the emergence of delta variant 50-70% transmissible, the greatest disease severity.

Beta (B1.351.Lineage) south Africa late 2020, USA, not globally dominant, the beta variant was immune evasion convalescent, post-vaccination plasma didn't neutralize viral contract with Beta spike Protein (as well as wildtype spike protein).

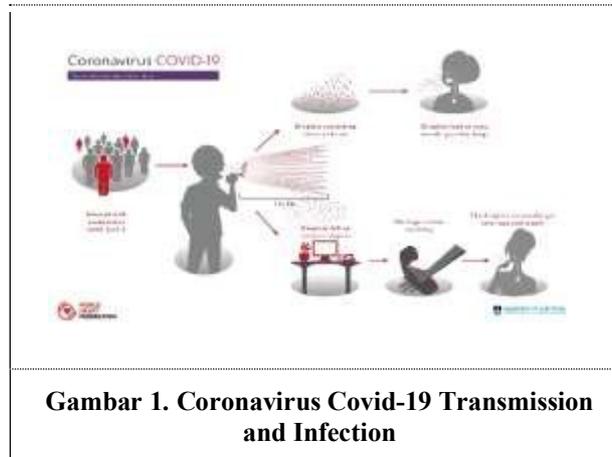
Gamma (P1 Lineage) first appear in Japan in December 2020, Brazil, USA, are not globally dominant, several mutations, and transmissibility, impose immunity.

Delta (B1.617.2 Lineage) peak in India in December 2020. The most prevalent variant worldwide until the emergence of omicron variable. Delta is more transmissibility, severe disease, need hospitalization compared to alpha.

Omicron (B.1.1.529-sublineage) detected in South Africa, in November 2021 spreading to multiple countries with greater replication. In the USA; the virus BA.1, BA.2 – prevalent worldwide BA 2.12.1, BA 4, BA5 (in UK BA 5>BA4). BA 1 caused a secondary attack, replication of the omicron variant. Immune escape humoral immunity causing breakthrough infection. Evade the vaccine (escape).

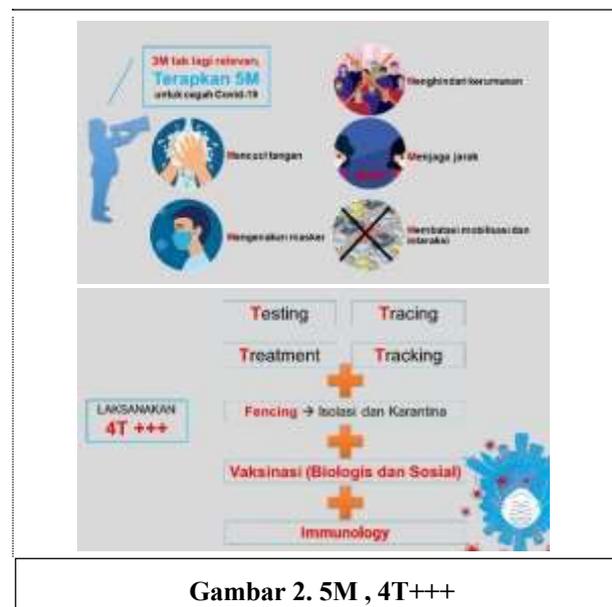
1.4. Public Health Program

- Coronavirus Covid-19 Tansmission and Infection



Gambar 1. Coronavirus Covid-19 Transmission and Infection

- 5M, 4T+++



Gambar 2. 5M , 4T+++

1.5. Fundamentals of Functional Medicine

Functional Medicine is a personalized, systems-oriented model for healthcare that empowers patients and practitioners to achieve the highest expression of health by working in collaboration to address the underlying causes of disease. Functional Medicine offers a powerful new operating system and clinical model for assessment, treatment, and prevention of chronic disease to replace the outdated and ineffective acute-care models carried forward from the 20th century. Functional Medicine incorporates the latest in genetic science, systems biology, and understanding of how environmental and lifestyle factors influence the emergence and progression of disease. Functional Medicine enables physicians and other health professionals to practice proactive, predictive, personalized medicine and empowers patients to take an active role in their own health. Addresses the underlying causes of disease, using a systems-oriented approach and engaging both patient and practitioner in a therapeutic partnership. Shifts the traditional disease-centered focus of medical practice to a more patient-centered approach, addressing the whole person, not just an isolated set of symptoms.



KESIMPULAN

Functional medicine emphasizes Physiogenesis: Safety, validity, and effectiveness, personalized and precision medicine, nutrition, nutraceuticals, lifestyle. To prevent and reverse the burden of complex, chronic diseases like long covid. IFM Assembled Wealth of Resources: Clinical recommendations, mechanisms of action, Virus-Specific nutraceuticals and botanical agents, nutrition lifestyle practices ↑ host defense, practice considerations; testing; and COVID-19 Vaccines.

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