International Journal of Vaccine Theory, Practice, and Research
IJVTPR

Potential Conscientious Objection to mRNA Technology as Preventive Treatment for COVID-19

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ABSTRACT

In the context of mass vaccination campaigns, the most widely used vaccines in Western countries are based on messenger RNA (mRNA). Some countries have imposed mandatory vaccination and many others have required a vaccination passport to access public transportation and many activities, producing systemic discrimination, social exclusion, segregation, and stigmatization against non-vaccinated individuals. This paper aims to present several scientific uncertainties on which, conscientious objectors to mRNA injections as a preventive treatment for COVID-19, could rely. Scientific data are presented on mRNA vaccines, which consist in mRNAs wrapped in lipid nanoparticles. Never used as a prophylactic drug, artificial mRNAs delivered to our cells forces them to express, against their nature, a biologically active viral protein. Unlike a drug produced in a pharmaceutical factory and formulated at a known dose and a well-defined protein product profile, the mRNA vaccine acts as a pro-drug encoding for the viral Spike protein of the virus to be produced by our own cells; both the dose and the quality of the proteins produced are unknown. We also ignore the distribution of the lipid nanoparticles carrying this mRNA in our body. We consider that the "conscientious objection" raised by the above considerations is a reason enough to refuse mRNA vaccines or similar technologies as a preventive treatment against COVID-19.

Keywords: *conscientious objection, mRNA technology, preventive treatment for COVID-19*

Introduction

The World Health Organization (WHO) declared a COVID-19 pandemic on March 11, 2020 and, early on, had estimated a fatality rate of approximately 3.2%. This disease was not well known at the time and most countries around the world followed the WHO like a line of dominoes falling in a chain reaction. They chose, hoping to prevent future infections, to lockdown their population to various degrees. Fortunately, epidemiological studies later evaluated the average global lethality rate of COVID-19 to about 0.15% (Ioannidis, 2021). The SARS-CoV-2 virus, according to the most recent relevant research (Horowitz, 2022)

was not as lethal as the influenza virus in the two years preceding the world-wide WHO "COVID-pandemic". The imposed lockdowns were unsustainable in the long term, themselves causing well-documented harmful economic and social disruptions (Verkerk et al., 2022). A consensus then emerged to the effect that the development of an effective vaccine could put an end to the pandemic, and consequently academic laboratories and pharmaceutical companies undertook vaccine development with the support of governmental agencies (Chung et al., 2020). Several so-called "vaccines" emerged during the late fall of 2020 (Kis et al., 2020), in record time, and have received conditional approvals until the end of their experimental phase 3. Unwarranted hope had been placed on pandemic control through distribution of the so-called "vaccines" to a majority of the world population, without individual risk-benefit assessment. While some traditional vaccines were produced on the basis of traditional technology using inactivated virus (Sinovac Biotech CoronaVac or Bharat Biotech BBV152), other injectable formulations were based on viral vectors (Vaxzevria ChAdOx1, AstraZeneca, Janssen or Cansino Biotech; see Ruggeri et al., 2022) or experimental genetic products based on messenger RNA (mRNA) as developed in 2020 by Pfizer-BioNTech (Comirnaty) and ModernaTherapeutics (Spikevax; see Dolgin, 2021).

Whereas traditional vaccines aim to deliver a dose of some active component (e.g., dead or weakened pathogens, or an attenuated toxoid, or protein from one or more pathogens) intended to be detected by specialized immune defense cells to induce protection (Paul, 2013), the theory behind both mRNA and viral vector injections is completely different. By one method or another, these genetic products are supposed to cause each of the body's ribosomal protein factories to produce multiple copies of the SARS-CoV-2 Spike protein (Nance & Meier, 2021).

Global Deployment of Genetic Injections

The emergency declared by the authorities worldwide has allowed the exceptional, first global deployment of a novel mRNA technology to massively vaccinate the population against COVID-19. The effects of these injections, beneficial or deleterious, short- and long-term, are theoretically (or at least allegedly) being monitored (The Vaccine Adverse Event Reporting System (VAERS), European Medicines Agency, 2022). Unfortunately, the monitoring systems severely underestimate the number of adverse events, with less than 1% of them making their way to the Food and Drug Administration (Lazarus, 2010). Moreover, reanalysis of original trial data, which may help detect safety concern signals, has been published more than a year after the deployment of the vaccines (Fraiman et al., 2022). Therefore, even when these analyses show a higher risk of developing serious adverse events than reducing cases of severe COVID, their potential to trigger a serious investigation regarding safety is very limited.

While much uncertainty persists around the effects on health of this new technology, some countries have imposed mandatory vaccination for the general population, whereas others target certain age groups or certain types of jobs. For example, Indonesia, Turkmenistan, Micronesia, and Austria imposed mandatory vaccination, France and Germany impose it on health workers, and employees of land, air and maritime transport companies must be vaccinated in Canada (A Touriel, 2022). From October 30, 2021, to June 20, 2022, Canadian citizens were prevented from traveling within or to leave the country, by plane or by train, if they had not received one of the experimental injections (Government of Canada, 2022).

Regardless of mandatory vaccination policies, most countries have required a "vaccination passport" to enter public places, such as restaurants, bars, places of worship, performance halls, sports halls, supermarkets, etc. They have, in doing so, created two classes of citizens, the "vaccinated" and the "non-vaccinated", thereby producing systemic discrimination and stigmatization against, in Canada's case, its own

Charter of Rights and Freedoms. All this, of course, was done under the pretense of a "health emergency" (Laplante, 2021) whose indefinite extension is, at best, highly questionable. Now, however, it appears that the governments of the world in following the recommendations of the WHO, CDC, the pharmaceutical industry, and the medical professionals who have complied with them, have indeed precipitated what promises to be a genuine world-wide health disaster (Horowitz, 2022).

The Merriam-Webster dictionary defines "conscientious objection" as an "objection on moral or religious grounds (as to service in the armed forces or to bearing arms)" (Merriam-Webster Dictionary, 2022). The moral objection could be based on the refusal to accept the mechanism of action of these mRNA vaccines, which make human cells perform a function that they would not normally execute: the production and expression of a foreign viral protein on their surface. Conscientious objection has already been used by students to refuse injection against COVID-19 and was accepted in four American universities (Osterholm & Oakes, 2021). The objective of this evidence-based opinion article is to present the scientific uncertainties on which conscientious objectors may rely to refuse injections based on mRNA technology as a preventive treatment for COVID-19.

The Experimental COVID "Vaccine" technology

Although the definition of "vaccine" has recently been changed to include mRNA and closely related genetic vectoring products, these experimental formulations are closer to gene therapy platforms rather than the long established and familiar vaccines aimed at polio or measles, for example. Such traditional vaccines have never required, in theory or in practice, 100% coverage of the population to reduce or stop the spread of a targeted virus. In contrast, the mRNA injections aimed at COVID-19 neither prevent contagion nor transmission, despite repeated injections (Singanayagam et al. 2022). Countries with the highest vaccine coverage have the highest number of infections by the targeted virus (Hart, 2021a, 2021b; Horowitz, 2022). Moreover, increases in COVID-19 infections appear to be unrelated to vaccination levels across 68 countries and 2,947 United States counties (Subramanian & Kumar, 2021).

This new technology, consisting of mRNA enclosed in lipid nanoparticles, has been used against certain cancers and infectious diseases, and, as such, supposedly represents a scientific advance (Pardi et al., 2018). However, its long-term effects and sequelae are as yet either completely unknown or just beginning to come to light (as seen in the present issue of the *IJVTPR* which is devoted to the *COVID Aftermath*). Before COVID-19 no such technology has ever been used as a prophylactic to prevent some disease, much less has any experimental pharmaceutical technology of any kind been deployed over a period of months to more than half of the world's total population. Therefore, it is critical to examine and document the experimental results being revealed from week to week as the current experimental scenario plays out to whatever ends it may have. Meantime, it is essential to assess continually the effects of the technology with respect to promised benefits, and whatever harms, it may bring when used now on billions of persons as a so-called "vaccination platform".

"Conscientious objection"

One thing that proponents and opponents of the new mRNA technology agree on is the fact that it is "unnatural". Artificial mRNA delivered to our cells instructs (Nance & Meier, 2021), or rather forces them to produce, against their nature, a biologically active, viral protein (or possibly fragments of it; see Lyons-Weiler, 2020; Vojdani & Kharrazian, 2020; Vojdani et al., 2021) that the body's cells would never normally produce (Suzuki et al., 2021; Suzuki & Gychka, 2021). This approach is deemed reasonable, by its

proponents in the governmental/pharmaceutical complex that profit from this therapy that can, supposedly, (see Nance & Meier, 2021), enable the recipient's genetic systems and natural immune defenses to reduce the likelihood and/or severity of a SARS-CoV-2 infection. In short, the experimental injections are supposed to help keep the world population healthy. But the aim of the COVID-19 mRNA vaccines is to reprogram the body's cells to produce a foreign Spike protein, or components of it, with unforeseen impact on the cells and organs of our body. Evidence is also rapidly accumulating to show that the experimental formulations, already injected into billions of human beings, appears to contain additional foreign particles that have been plausibly associated with problems in vital systems dependent on circulation of the blood (Lee et al., 2022; Young, 2022; Benzi-Cipelli et al., 2022). The lack of transparency regarding the chemical, physical, nucleotidic and other contents of the injectable preparations is, to say the least, inexcusable. On the basis of what is already known, irrespective of the undisclosed components in the experimental formulations that may be harming multiple organ systems (Benzi-Cipelli et al., 2022), it seems that any reasonable person must be entitled to raise a legitimate "conscientious objection" against forcing their cells to express, against their nature, a harmful SARS-CoV-2 Spike protein or whatever component peptides the mRNA formulations aiming to produce that Spike may engender. Moreover, this objection is reinforced by the fact that proponents of the new technology have failed to consider two of the most basic principles in pharmacology: the dose of the active product and its distribution to bodily systems following its administration.

The dose

Unlike a traditional drug produced in a pharmaceutical factory and formulated at a known dose, the "active pharmacological product" of the mRNA genetic vaccines is supposed to be the artificially produced Spike protein of the SARS-CoV-2 virus engendered by the artificial mRNA commandeering the protein producing ribosomal factories of our own bodily cells (Lamb, 2021; Pfizer Confidential, 2022). Because individuals are different with respect to a host of uncontrolled variables — their genetic constitutions, history of infections, metabolism rates, immune systems health, diet, etc. — it is impossible to know the quantity and the quality of the "active pharmacological product" that any given body's cells will actually "manufacture". As a result, the pharmaceutical requirement of administering a precise dose of any of the experimental formulations is flouted — and it vanishes.

Usually, the "pharmacologically active product" can be measured in the blood and urine to determine its circulating levels, kinetics, and elimination routes. To our knowledge, data have yet to be made available, perhaps because the Spike protein was believed to bind to and/or be exposed on the surface of cells, and, theoretically, would not circulate (Pardi et al., 2018; Polack et al., 2020; Suzuki et al., 2021). However, the Spike protein has been detected in the plasma of vaccine recipients (Ogata et al., 2022) which, considering that the Spike itself is supposedly a structurally stable protein (Lyons-Weiler, 2020; Vojdani & Kharrazian, 2020; Vojdani et al., 2021) with virus-independent cytotoxic effects (Pardi et al., 2015; Polack et al., 2020, Scioli Montoto et al., 2020; Suzuki et al., 2021) calls for the urgent need of pharmacovigilance studies. Moreover, foreign materials present in the vaccines have also been detected in the plasma of vaccine recipients as late as four months after the injection, reinforcing the need of reassessing the pharmacokinetics, the actual contents, and the clinically known impact of the products on recipients (Lee et al., 2022; Benzi-Cipelli et al., 2022; Young, 2022).

The Distribution of the Product in Recipients

The health regulation agencies did not express any concern regarding the distribution and impact of the billions of lipid nanoparticle complexes in which the mRNA payload is encapsulated to be delivered to the body's cells where it may supposedly commandeer the body's ribosomal protein factories to produce who knows how much of the SARS-CoV-2 Spike protein, or which peptides may be contained within the mRNA code aiming to represent it intelligibly to the body's cells (Polack et al., 2020). Some articles (Scioli Montoto et al., 2020, Pardi et al., 2015), and a Pfizer report to the Japanese government (Pfizer, 2022), show that the cell transfecting lipid nanoparticles used in their COVID-19 formulation achieve distribution throughout the body's systems. The lipid nanoparticles seem to be empowered to deliver their mRNA cargo anywhere in the body. The mRNA can go to the brain and nervous system, the heart, lungs, and the bone marrow (Pfizer, 2022). Consequently, any cells may internalize this artificial mRNA to produce, expose, and release an unknown amount of viral Spike protein (or peptide components specified in the mRNA code), and may come to be recognized by our immune defenses. However, the efforts to eliminate the "foreign" products coming from its own bodily cells define a textbook scenario for causing autoimmune diseases. What is to prevent the immune defense systems from attacking the self-cells of the body that is producing the foreign Spike or parts of it?

In addition, there is the well-documented problem of molecular mimicry known to be involved in autoimmune cross-reactivity showing that antibodies against the SARS-CoV-2 Spike (or its related peptides) are most reactive against human transglutaminase 3, transglutaminase 2, anti-extractable nuclear antigen, myelin basic protein, mitochondria, nuclear antigen, α-myosin, thyroid peroxidase, collagen, claudin 5+6, and S100B (Vojdani & Kharrazian, 2020). Also, the production of specific autoantibodies and vaccine adjuvants seem to contribute to autoimmune processes (Chen et al., 2022). Recent sequencing analyses of a blood sample from a patient who suffered from BNT162b2 mRNA COVID-19 vaccine-associated myositis suggest the presence of mRNA vaccine fragments (Magen et al., 2022). This was associated with a low level of anti-SARS-CoV-2 IgGs detected, suggesting that the mRNA vaccine was not translated into the full-length Spike protein in this patient. In any event, there was apparently no immune response to SARS-CoV-2.

The cellular autoimmune mechanisms described above have translated into the occurrence of clinical post-vaccination syndromes, including thrombotic thrombocytopenia, thrombocytopenic purpura, hepatitis, cholangitis, IgA nephropathy, polyarthritis, rheumatoid arthritis, and thyroid disease. (Klomjit et al., 2021; Chen et al., 2022, Ruggeri et al., 2022). Last, but not least, myocarditis has been recognized by the manufacturers as an adverse event, with an incidence that varies depending on the cohort analyzed, but that may reach 4 to 28 excess events per 100 000 vaccine doses in young males (Østein et al., 2022). More importantly, a recent study analyzing endomyocardial biopsies of patients suffering from myocarditis post-vaccination has shown the presence of Spike protein and immune inflammatory cells in the myocardial tissue, supporting the existence of post-injection autoimmune disease in actual clinical cases (Baumeier et al., 2022).

Artificiality Added to the Formulation

Vaccine mRNAs were engineered to improve their stability and protection from degradation (e.g., evading natural immunological response to RNA-like viral infection), thus extending their lifespan relative to natural, endogenous mRNAs produced by our cells. The artificial, molecular substitution of uridine by N1-methyl-pseudouridine in the mRNA of these products aimed not only to induce immune evasion, but also to increase Spike protein production (Nance & Meier, 2021). However, N1-methyl-pseudouridine may also

promote the infrequent usage of alternate codons, which may result in amino acid substitution or premature termination of mRNA translation, with unknown consequences, as translation of these synthetic mRNA may result in heterogenous protein mixtures of ill-defined composition i*n vivo* (Morais et al., 2021).

More importantly, the artificial mRNA has been detected in lymphoid tissue germinal centers for as long as 60 days after the second COVID-19 injection (Röltgen et al., 2022). This means that our cells are still producing a biologically active viral protein up to two months after mRNA injection, which is much longer than initially claimed. Additionally, the occurrence of chronic COVID symptoms (also known as long COVID or post-acute sequelae of COVID-19), which has been associated to the persistence of SARS CoV-2 S1 protein post-infection (Patterson et al., 2022), has now been recognized four weeks post-vaccination, showing a similar increase in Spike protein translated from injected mRNA (Patterson et al., 2022 pre-print). This highlights a dual negative impact of COVID injections: first, the sustained production of Spike protein, and second, its potential pathophysiological role in the development of long COVID symptoms.

Finally, mRNA guanine (G) and cytosine (C) residues were modified to enhance translation of the Spike protein encoding sequence (Mauro & Chappell, 2014). High GC content in RNA may create secondary structures, such as guanine quadruplexes (i.e., four-stranded secondary structures of riboguanines), that confer catalytic properties to the RNA, but also modify regulatory and structural roles of the resulting proteins (Fay et al., 2017). Consequently, codon optimization has been seriously questioned because of the deleterious effects it may have on a wide range of factors on which immunological balance depends (Agashe et al., 2013; Zhou et al., 2013; McCarthy et al., 2017). Taken together, the vaccine mRNA formulation is not natural and may represent, through its disruptive regulatory impacts, a threat to the homeostasis of the body's immune defenses.

All the above evidence indicates that people may react very differently to mRNA injections and exhibit different adverse events, depending on the amount of Spike protein (either full-length or truncated) produced, the occurrence (or not) of molecular mimicry, the effect of adjuvants, the biodistribution of the mRNA and the number and type of cells that may either be affected directly by the Spike protein and/or recognized and attacked by their immune system reacting to it (Chen et al., 2022, Baumeier et al., 2022). The most serious adverse reaction to these products is death, which appears to exhibit a worrisome correlation in a study analyzing UK data of all-cause mortality within 60 days of a positive COVID test in vaccinated vs non-vaccinated people (Oller & Santiago, 2022; also see Horowitz, 2022).

Conclusion

Several countries have deployed mass vaccination or imposed vaccination mandates or vaccine passports with the aim to mitigate the COVID-19 pandemic, with unforeseen health and societal impacts on their population. The overall risk of lethality to the virus is relatively low, at around 0.15% (which excludes asymptomatic infections), which decreases considerably with young age and the absence of comorbidities (Ghisolfi et al., 2020; Sasson, 2021). On the other hand, several major side effects and many deaths consecutive to mRNA vaccination have been reported in the databases that record the adverse effects of vaccines by the European Medicines Agency (2020) and the Vaccine Adverse Event Reporting System in USA, which may be underreported due to the passive, rather than active, surveillance of vaccination campaigns (Hinrichsen et al., 2007; Lazarus, 2010). Citizens have been placed under tremendous pressure, from both their governments and their peers, either to consent to being vaccinated against COVID-19 or to comply with vaccination mandates. In the current context, however, we believe that citizens must be able to assess, freely and independently, all the relevant information regarding the mechanism of action and

implications of the new mRNA vaccine technology before making a conscious decision to consent or not to vaccination. We consider that the "conscientious objection" raised by and based on the above considerations is a reason enough for people who are not particularly at risk of COVID-19 complications to refuse mRNA vaccines or similar technologies as a preventive treatment against COVID-19.

Acknowledgments

No funding was received for this work.

Conflict of Interest Statement

None of the authors has any conflict of interest to declare.

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