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Review Article

Cancer Mortality Surges Post COVID ModRNA Vaccination Ronald Palacios Castrillo

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Abstract

Recent investigations have revealed a concerning association between the administration of the third dose of the ModRNA COVID-19 vaccine and statistically significant increases in cancer mortality rates. A study conducted in Japan highlighted this correlation, noting a marked rise in cancer-related deaths post-vaccination. This phenomenon is not isolated to Japan; similar trends have been observed in Europe, Australia, and the USA, with an excess of deaths reported from 2020 to 2023 compared to 2019. In this review, we explore seven potential mechanisms through which ModRNA COVID-19 vaccines may contribute to the initiation and progression of cancer. Each mechanism is discussed in detail, with a focus on the underlying molecular and cellular pathways. The potential for varied combinations of these mechanisms to influence different cancer types is also considered, providing a comprehensive overview of how ModRNA vaccines might impact cancer biology. Our analysis underscores the necessity for further research to elucidate the precise relationship between ModRNA COVID-19 vaccination and cancer progression. Understanding these mechanisms is critical for developing strategies to mitigate potential adverse effects while harnessing the benefits of vaccination.

Keywords

ModRNA, COVID-19, Cancer & ModRNA Vaccines

1. Introduction

Gibo and colleagues [1] have reported "factually noteworthy increments" in mortality rates for all cancers, particularly those related to estrogen, following mass immunization with the third doses of the ModRNA vaccination against COVID-19 [1]. Gibo and colleagues assessed the effect of the COVID-19 pandemic on age-adjusted mortality rates for 20 distinctive types of cancer in Japan using official records on deaths, SARS-CoV-2 infections, and vaccination rates.

The authors made a startling revelation: there were no excess cancer deaths in Japan during the initial year of the pandemic, but they observed an increase in cancer mortality coinciding with mass vaccination in subsequent years. Japan has the highest vaccination rates and is currently conducting mass vaccinations with a seventh dose of ModRNA vaccines. According to the investigators, after mass vaccination began in 2021, there was a significant increase in cancer mortalities coinciding with the primary and subsequent doses of the ModRNA vaccine against Covid. After inoculation with a third dosage of ModRNA vaccine in 2022, the researchers observed "critical excess mortalities" for all cancers and particularly for cancers related to estrogen and estrogen receptor alpha (ERα), ovarian, leukemia, prostate, lip/oral/pharyngeal,

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pancreatic, and breast cancers. Particularly, breast cancer had a "noteworthy shortage in mortality" in 2020 but changed to excess mortality in 2022 after the use of the third dosage of ModRNA vaccines. Apart from pancreatic cancer, which was steadily increasing before the pandemic, the other five types of cancer were on a descending trend. However, the six types of cancer exceeded expected mortality values in 2021, 2022, or both years.

Furthermore, the four cancer types most associated with deaths (lung, colon, stomach, and liver cancer) were in decline before the 2020 pandemic. However, the decline slowed after the introduction of mass vaccination with ModRNA against COVID-19 [1]. From 2020 to 2023, several European countries, Australia, and the United States reported an increase in the number of deaths compared to that observed in 2019. The cause of this is unknown, but some authors suggest that it may be related to mass vaccination with ModRNA-based vaccines.

Significant Changes in Excess Mortality Rates

Before the COVID-19 pandemic, from 2010 to 2019, there was a decreasing trend in cancer mortality rates. However, in 2020, researchers noted that mortality rates continued to decrease for most age groups except those aged 75 to 79 years old. In 2021, the trend gradually shifted towards excess deaths, which further increased in 2022 for almost all age groups. The study revealed that in 2021, there were significant excess deaths of 2.1% from all causes and 1.1% from all cancers. In 2022, excess mortality from all causes surged to 9.6%, and excess mortality from all cancers rose to 2.1%. The study also found that mortality rates from all types of cancer were highest among people aged 80 to 84, with more than 90% of them having received their third vaccination. All administered vaccines were ModRNA, with the Pfizer vaccine accounting for 78% and the Moderna vaccine accounting for 22%.

Researchers argued that while reduced cancer screening tests and decreased access to healthcare during forced lockdowns could contribute to cancer mortality rates, they could not fully explain the significant increase in mortality observed for different types of cancer after lockdowns ended, when screening and treatment appeared to be normalized. Therefore, the particularly large increase in mortality in estrogen receptor alpha (ERα)-sensitive cancers may be attributed to a different mechanism of ModRNA-LNP vaccination, rather than a reduction in cancer treatment due to lockdown.

A link between ModRNA vaccines and cancer has long been suspected based solely on immunology. ModRNA vaccines are widely believed to disrupt the innate immune response, leading to increased susceptibility to infection, increased autoimmune disease, and accelerated cancer progression.

2. Possible Mechanisms Behind ModRNA Injection-Associated Cancer

Here are seven mechanisms by which ModRNA COVID-19 vaccines may contribute to cancer growth and progression. It is highly likely that different mechanisms play a role in different combinations depending on the type of cancer.

2.1. ModRNA Vaccines and Estrogen Sensitivity

In a study by Gio et al. [1], age-adjusted mortality rates for estrogen-sensitive cancers and ERα were significantly higher than predicted, especially in 2022. Studies have shown that the spike protein binds specifically to ERα and increases its transcriptional activity. This interaction can affect the body's response to cancer and its growth. In a 2020 study published in Translational Oncology [2], researchers found that the S2 subunit of the SARS-CoV-2 spike protein is linked to the tumor suppressor gene p53, which is commonly mutated in cancer, including BRCA1 and BRCA2 mutations. Reduced BRCA1 activity is associated with an increased risk of breast, uterine, and ovarian cancers in women, as well as prostate and pancreatic cancers. BRCA2 mutations are associated with breast, ovarian, and prostate cancers in adults, as well as acute myeloid leukemia in children.

2.2. Biodistribution of Lipid Nanoparticles

Studies have revealed that lipid nanoparticles (LNPs) in ModRNA vaccines are widely distributed in various organs after vaccination, including the liver, spleen, adrenal glands, ovaries, testes, and bone marrow, where the spike protein has been shown to be expressed, as well as in circulating peripheral blood in the body [3]. In a paper published in August 2023 in Proteomics Clinical Applications [4], researchers found that 50% of vaccine recipients had a specific recombinant spike protein fragment derived from ModRNA vaccines in their blood samples after 3 to 6 months. Compared to natural infection with SARS-CoV-2, the viral spike protein was detected in the bloodstream for only 10 to 20 days, even in severely ill patients. The same study suggests that the spike protein may be incorporated or re-transcribed into some cells. A study published in the Journal of Immunology [5] in November 2021 showed that exosomes express recombinant spike protein 14 days after vaccination with a ModRNA vaccine against COVID. An increase in recombinant spike protein was observed 4 months after the second dose of the vaccine and increased with subsequent booster doses. Spike proteins derived from natural viruses or recombinant versions derived from ModRNA have been shown to be pathogenic on their own [6].

2.3. Modification with N1-methyl-pseudouridine

This is because ModRNA containing N1-methyl-pseudouridine (m1Ψ) allows the ModRNA from the coronavirus injection to remain in the body indefinitely, resulting in the persistent expression of the recombinant spike protein in several tissues. It means that it is generated without

being created. Current ModRNA vaccines against COVID-19 contain modified mRNA (ModRNA) containing pseudouridine, which dampens or changes the activity of key proteins called the TOLL receptors, which prevents tumor formation and growth. ModRNA vaccines inhibit key immune pathways, particularly the innate immune response, affect recombinant spike protein synthesis, and negatively impact immune activation. N1-methylpseudouridine (m1Ψ) alone causes immune suppression [7].

When the immune system is not fully functional, conditions arise for cancer to grow rapidly. Some call this "turbo cancer."

A paper published in the International Journal of Biological Macromolecules on April 5, 2024 [8], found that modification with N1-methylpseudouridine can cause immune suppression and promote cancer development. Adding 100 percent N1-methylpseudouridine to an mRNA vaccine was shown to stimulate cancer growth and metastasis in a melanoma model, while unmodified mRNA vaccines showed the opposite results.

2.4. Antibody-Dependent Enhancement

Another mechanism is that multiple doses of ModRNA vaccines expose a person to both virus-produced spike proteins and vaccine-produced spike proteins, leading to antibody-dependent enhancement (ADE) [9], immune priming, and immunosuppression. This increases susceptibility to COVID-19 reinfections. ADE is a phenomenon in which antibodies facilitate the entry and replication of viruses into cells. The shift to IgG4 anti-spike antibodies caused by repeated vaccinations with ModRNA may induce resistance to the spike protein and impair the production of IgG1 and IgG3 antibodies with significant neutralizing capacity against the virus, thereby facilitating the persistence of the virus and spike protein and hampering the humoral immune response to reinfection. Briefly, this represents a mechanism of immune imprinting that was first described in individuals infected with different strains of influenza virus.

2.5. Thrombogenic Effects of Spike Protein and LNP

ModRNA vaccines against COVID pose a risk of thrombosis in cancer patients and may explain excess mortality after mass vaccination [11, 12]. It is reasonable to believe that the additional tendency for blood clot formation observed with the ModRNA-LNP vaccine could be extremely dangerous. The spike proteins of the virus SARS-CoV-2 and ModRNA vaccines have strong positive potentials that can bind to electronegative complex carbohydrates on the surface of red blood cells and other cells. The spike protein can also bind to the angiotensin-converting enzyme 2 receptor (ACE2), which activates the inflammatory and immune systems, leading to thickening of blood vessel walls, impaired mitochondrial function, and the release of reactive oxygen species (ROS). ROS are highly reactive radicals, ions, or molecules with one unpaired electron in their outer electron shell. Cancer cells contain high levels of ROS due to metabolic activity, oncogene activity, mitochondrial dysfunction, and other immune processes. Certain segments of the spike protein can cause the formation of amyloid (insoluble fibrous tissue), and antibodies against the spike protein can bind to the nascent S protein (which controls clotting). Dr. Pretorius and coworkers, first described the blood clots that form in patients exposed to ModRNA vaccines and natural viruses as abnormal blood clots that contain amyloid fibrin and are resistant to the effects of anticoagulants at normal doses [13]. The results were confirmed by various research groups [14, 15]. Respected German pathologist Professor Dr. Arne Burkhardt was a pioneer in detecting the presence of microthrombosis and inflammation in various organs and tissues in autopsies of people who died after Covid/ModRNA (3) [Please refer to the video lecture (https://youtu.be/sgF1nIdZjrc?si=RhmEDOI4JhmLFfGL)].

2.6. Suppressing Cancer Immune Vigilance

The ModRNA vaccine against COVID-19 has been shown to suppress the immune system (see reference 10). This suppression leads to the reactivation of potential cancer-associated viruses, such as varicella-zoster virus and human herpesvirus 8 (HHV8). HHV8 is considered an oncogenic virus that can cause Kaposi's sarcoma. Reactivation of the Epstein-Barr virus or human papillomavirus (HPV) can lead to oropharyngeal cancer or cervical cancer, respectively. On the other hand, the spike protein has been shown to inhibit the activity of tumor suppressor genes (such as P53, BRCA1, and BRCA2). The spike protein suppresses the function of BRCA [16], thereby promoting the growth of ovarian and breast cancer. These phenomena likely contribute to excess mortality from lip, mouth, and throat cancer caused by the reactivation of oncogenic EBV and HPV viruses during the third and subsequent mass vaccination campaigns of ModRNA vaccines in 2022. This information may also be useful for explanation.

Current ModRNA vaccines against COVID-19 attenuate or alter the activity of key proteins of the innate immune system, thereby impairing cancer surveillance. When activated, these important proteins, also known as inhibitors of T-cell activation receptors (such as PD-1), can promote tumor formation and proliferation.

ModRNA injection alters T cell signaling, resulting in significant impairments in interferon type 1 and 2 production and action, as well as cancer surveillance. T cells play a crucial role in helping the body's immune system prevent cancer [17].

Studies have shown that multiple doses of ModRNA vaccines increase levels of a particular class of antibodies called IgG4, which suppress T cells and interferon, resulting in a loss of cancer control [23].

Everyone harbors atypical cells in their bodies every day,

and surveillance systems are crucial. However, if the surveillance system falters, these cells can behave uncontrollably and proliferate unchecked.

When the immune system operates at less than full capacity, conditions are ripe for the rapid proliferation of cancer cells. This can occur through the reactivation of potentially oncogenic viruses (such as HHV8, HPV, EBV) and the inhibition of tumor suppressor genes such as p53 and BRCA. Some refer to this scenario as "turbo cancer".

2.7. Reverse Transcription of RNA to DNA

Reverse transcription of RNA in ModRNA COVID-19 vaccines could potentially explain the increase in cancer mortality. Reverse transcription converts mRNA into DNA, which can then integrate into and affect the human genome.

A study published in Current Issues in Molecular Biology in 2022 [18] demonstrated that ModRNA vaccines can integrate into human genes or DNA through reverse transcription. Another paper published in Medical Hypotheses in 2023 [19] suggests that the accumulation of ModRNA and reverse-transcribed DNA molecules in the cytoplasm may lead to chronic inflammation, autoimmunity, DNA damage, and cancer in susceptible individuals [10, 19].

Geneticist Kevin McKernan also found evidence that ModRNA COVID-19 vaccines can undergo reverse transcription into DNA [20]. McKernan and colleagues discovered the sequence of the spike protein in the COVID-19 ModRNA vaccine, which was then reverse-transcribed into DNA and integrated into chromosomes 9 and 12 in human breast cancer and ovarian cancer cell lines. Other researchers have confirmed the conversion of ModRNA to DNA and its integration into the genome in human cell lines [18, 21].

McKernan and coworkers also found that the side effects caused by a specific vaccine batch were consistent with the amount of contaminating DNA present. Additionally, they discovered the sequence of the SV40 viral promoter in ModRNA vaccine vials. The presence of the SV40 virus in the DNA found in Pfizer's ModRNA vaccine vials can potentially lead to cancer, particularly non-Hodgkin's lymphoma and other lymphomas, similar to those observed in polio vaccines contaminated with SV40 [22].

Spike proteins can interfere with DNA repair mechanisms and promote mutations in cancer-related genes, leading to their activation.

There are several mechanisms by which residual DNA may be carcinogenic. This includes altering oncogenes and influencing their expression, or insertional mutagenesis after DNA integration. Finally, ModRNA-based vaccines can trigger the release of oncogenes (oncomiR or microRNA), increasing carcinogenesis and disrupting biological mechanisms such as proliferation, metastatic invasion, angiogenesis, chemo-resistance, and immune escape, all of which may contribute to cancer growth and spread.

3. Conclusion

The study by Gibo and colleagues in Japan, along with reports from several other countries including various European nations, Australia, and the USA, have consistently highlighted an increased cancer mortality following ModRNA vaccination for COVID-19. Further investigations akin to the study conducted by Gibo and colleagues are warranted in other regions to comprehensively evaluate this phenomenon.

In this discourse, we have delineated seven mechanisms through which ModRNA COVID-19 vaccines might potentially contribute to the growth and progression of cancer. It is probable that distinct mechanisms operate in varying combinations, contingent upon the type of cancer under consideration. Additional research endeavors are imperative to elucidate the intricate interplay between ModRNA vaccination and cancer outcomes, thereby facilitating a more nuanced understanding of this crucial subject matter.

Abbreviations

ModRNA	Modified mRNA in the mRNA Based COVID Vaccines
ROS	Reactive Oxygen Species
IgG	Immunoglobulin G
SV40	Simian Virus 40
HHV8	Herpes Virus 8
CMV	Cytomegalovirus
EBV	Epstein Barr Virus
HPV	Human Papiloma Virus

Author Contributions

Ronald Palacios Castrillo is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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