Resource Sheet 4
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COVID-19 Vaccination and Scarring Alopecia

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This webinar was presented by two renowned speakers Dr. Jeff Donovan, a Board-Certified Dermatologist at Donovan Hair Clinic and Dr. Victoria Barbosa, a Board-Certified Dermatologist and Director of the Hair Loss Program, University of Chicago and was hosted by Christine Janus, Treasurer of Cicatricial Alopecia Research Foundation.

The overarching topic of this presentation was the discussion of COVID19 vaccines in patients with Scarring Alopecia. The various subtopics addressed include the following:

- Overview of the COVID19 Infection – How does the immune system of the human body respond to the infection?
- Review of the Current Vaccines – Moderna, Pfizer, J&J, etc.
- COVID19 and Autoimmune Diseases
    - Does COVID19 cause autoimmune diseases?
    - What do we know about the safety of vaccines in autoimmune diseases?
- Should I be vaccinated?
    - A look at Benefit vs. Risk
- COVID19 Vaccine Chat

Overview of the COVID19 Infection:

Coronavirus is not a novel virus and in addition to SARS-CoV-2 virus, there are many types of coronaviruses. COVID19 has led to almost 107 million confirmed cases, and there is most likely a much higher total case number. There have also been 2.3 million virus-related deaths so far.

What Composes the Coronavirus?

The virus has genetic information inside called RNA which is surrounded by an envelope or coating which allows for the mobility of the RNA material. The overarching goal of the virus is to ensure that the RNA is replicated. One of the important components of this virus is a protein known as the spike protein which allows it to adhere to the body. In addition, there are around 25 other proteins which also facilitate the vitality of the virus including the E protein, the M protein, and the nucleocapsid protein. Therefore, when the virus enters body, the immune system mounts a response against these proteins.

Spike Protein:

The Spike protein (S protein) is the essential component for the virus to enter the human body. The S protein exists on the surface of the virus, and it attaches to the ACE 2 Receptor on the human cell allowing the two to bind together. Therefore, the COVID19 vaccines are created against the SARS-CoV-2's S protein.

Review of the Current Vaccines:

There are many different forms of vaccines that exist today.

Inactivated	Killed version of a virus that causes a disease
Live Attenuated	Weakened form of the virus that causes a disease
Protein Subunit	Possesses particular isolated proteins from viral pathogens
Virus-like Particles	Molecules that mimic viruses but are not infectious
Virus-vectored	Uses a modified version of a different virus as a vector to deliver instructions, in the form of genetic material to a cell
mRNA	Viral RNA that enters the body and causing the body to make the viral protein from that information.
DNA	Viral DNA that enters the body causing the body to make the viral protein from that information.

Vaccine Quick Facts:

- 11 vaccines approved so far around the world
- 214 vaccine candidates
- 51 in clinical evaluation
- 13 in phase 3 trials

What Are Some Features of the Ideal Vaccine?

1. It causes the body to make many antibodies to fight off the SARS-CoV-2 virus
2. It does not cause the body to make antibodies that damage the body
3. Immunization lasts a long time
4. Fights off all the SARS-CoV-2 virus, variants

The mRNA Vaccine:

Right now, the mRNA vaccine appears to be the most effective and highly immunogenic in activating the human immune system.

Pfizer and Moderna are mRNA vaccines. They are vaccines that inject mRNA into the muscle. The muscle takes up the vaccine and manufactures Spike Proteins (S Proteins) that are released into the body causing the body to make antibodies against the S Protein.

How Effective Are the Vaccines?

Pfizer	2 doses, 21 days apart, 95% effective to prevent COVID19
Moderna	2 doses, 28 days apart, 94.1% effect to prevent COVID19

Side Effects of the Vaccines

There are some known sides effects of the vaccines including:

1. Injection side reactions
2. Whole body (System) Fatigue
3. Headaches
4. Fever
5. Joint Pain
6. Enlarged Lymph Nodes
7. Muscle pain

Why Are We Vaccinating People?

The simplest answer to this question is so that people do not get sick. We want to prevent infection, prevent disease, prevent hospital admission, prevent intensive care unit admission, prevent death, and prevent transmission. It is especially important to vaccinate those individuals who are older in age.

The greatest risk factor for COVID19 is age. The death rate increases with age. The risk of someone in their 80's getting hospitalized is about 80 times higher than someone 5-17 years of age, and the risk of dying is 1000 times higher than someone 5-17 years of age.

COVID19 and Autoimmune Diseases

Does Covid 19 Cause Autoimmune Diseases?

Infectious diseases have long been considered one of the triggers for autoimmune and autoinflammatory diseases, and this is also true for COVID19. For example, Influenza can cause Multiple Sclerosis; therefore, it is certainly possible that COVID19 can trigger autoimmunity, but this needs to be further studied.

Some autoimmune diseases linked to COVID19 include:

1. Idiopathic thrombocytopenic purpura
2. Guillain barre syndrome
3. Autoimmune hemolytic anemia
4. Graves' disease
5. Type 1 diabetes
6. Kawasaki and MISC
7. Lupus
8. Myasthenia gravis
9. Postural orthostatic tachycardia

Furthermore, the coronavirus has triggered at least 15 autoantibodies in patients including:

1. ANA
2. RF
3. P-ANCA
4. C-ANCA
5. Anti IFN
6. Anti Ro52
7. Anti CCP
8. Lupus anticoagulant
9. MDA5

Can the COVID 19 Vaccine Cause Autoimmune Disease?

This is not known, but there appears to be no indication that the risk for developing an autoimmune disease is higher than getting the infection itself.

Does COVID19 Vaccination Flare Existing Disease in Patients with an Autoimmune Disease?

We do not know for sure, but an analysis of the existing literature showed that people who already had autoimmune diseases were not endangered by worsening of the disease following vaccination. It also appears that the vaccines will be effective if a patient is on medication for an autoimmune disease.

Should I Be Vaccinated?

To answer this question, we can use an example case of a 53-year-old female diagnosed with Lichen planopilaris, who is treated with topical steroids, periodic steroid injections, hydroxychloroquine, and low-level laser. She worries that COVID19 vaccine might activate her disease.

Should she get the vaccine?

Given that this patient is 53 years old, she has high risk of contracting COVID19, and her chances of dying are elevated. Therefore, she should be vaccinated because the benefits outweigh the risks.

A Look at Benefit vs. Risk:

To answer the question of whether to receive the vaccine or not, an individual needs to consider the benefits and risks in terms of their personal situation. Overall, however, the benefits of the vaccine are very high and the risks and fairly short term.

Benefits of the Vaccine:

Reduced chance/risk of contracting COVID19, hospitalization, dying from COVID, long term issues from the virus, getting new autoimmune disease from COVID, and hair loss from COVID.

Risks of the Vaccine:

Short term side effects of pain, fever, headache, muscle pain, joint pain, fatigue, low change of disease activation as we understand things now, and a low chance of getting other autoimmune diseases.

Covid Vaccine Chat

Dr. Barbosa is very interested in knowing from her patients what their opinions are on the COVID19 pandemic and the vaccines. Many individuals are experiencing COVID19 Fatigue. It is ok to feel this sense of fatigue; however, this is a new normal, and we will be like this for a while; therefore, we must adjust our expectations. Some have lost loved ones and family members due to Coronavirus. Many people have questions and concerns about the vaccine, and it is important to understand that these questions are warranted.

Dr. Barbosa's Experience with the COVID Vaccine:

After receiving the vaccine, Dr. Barbosa reported experiencing the following symptoms: injection site pain, shaking chills, crushing fatigue, brain fog, headache, fever, muscle joint pain, swollen lymph nodes, and nausea. It is very important to know that one may not feel totally healthy after receiving the vaccine, but this is an indication of effectiveness.

Is the Vaccine Safe?

As of early February, 37 million vaccinations were administered worldwide and only 350 deaths reported. Most of these deaths were related to preexisting COVID19 infection or other causes. This vaccine is very unlikely to provoke anaphylaxis or death. The percent of people with serious or adverse events due to the vaccine was only 9%.

Was the Vaccine Rushed?

mRNA vaccine development has been in the works for 10 years. Therefore, the technology for these vaccines has been in the process for a long time, and these vaccines are built on a platform of knowledge from a decade. Over the past year, companies have invested unprecedented resources towards the development of the vaccines. Furthermore, there were large clinical trials which took place with large numbers of volunteers, and these trials facilitated a lot of data.

Mistrust:

There is some mistrust that exists in the society towards vaccines because of sentiments that the process was politicized. Government and physician mistrust are valid feelings.

Your Checklist for Deciding on the Vaccine:

1. Talk to your physician
2. Schedule your vaccine wisely
3. Do not pre medicate
4. Bring Benadryl or EpiPen if you have a history of allergic reactions

5. Plan to stay for observation
6. Treat your side effects
7. Do not forget to get your second shot
8. Spread the word about your experience

Q & A with Dr. Donovan and Dr. Barbosa:

Q-Are any of the chemicals in the covid vaccine an allergen to people with FFA or any kind of Scarring Alopecia?
A-*A person with FFA would not appear to be at increased risk.*

Q-Would you consider FFA as an autoimmune disease and eligible for the vaccine at age 64 (under 65)?
A- *FFA is not a condition that puts you at any increased risk if you develop the COVID19 infection; therefore, FFA does not bump people up in the queue for getting the vaccine. People with FFA who are near age 65 should get the vaccine barring any allergic reaction.*

Q- I have heard of couple cases of Thrombocytopenia after the vaccine was given. I understand that some autoimmune diseases can also causes this; would this be an area of concern for people with scarring alopecia and perhaps trigger or bring on thrombocytopenia?
A- *Thrombocytopenia can be caused by COVID19 in a small number of cases, but we do not have enough data to tell if this condition is also caused by the vaccines.*

Q- Have any of your patients had ANY negative side effects specific to scarring alopecia following vaccination for COVID19?
A- *Many patients have developed Alopecia over the last year, and this is likely due to the stress of COVID19. Overall, though, no patients have had worsening Alopecia or developed Alopecia due to the vaccine. Some patients may have more itching, redness or shedding following the vaccine. This is in a small subset of patients, and we do not know if this is a coincidence or not.*

Q-What has been seen in our community about reactions for us if someone develops COVID?
A- *The responses are the same, and the changes of becoming hospitalized are the same. Scarring alopecia does not change things, nor do the medications used, alter the risk. The concerns for the Scarring alopecia community mirror the concerns for the general population.*

Q- If you are on an immunosuppressant for Scarring Alopecia, is the risk for COVID19 increased, should I get my vaccine?
A- *Overall, you should continue taking your medications and get vaccinated when available.*

Q-Won't mRNA vaccines make our already overactive immune system worse- therefore making our condition worse?
A- No, *the vaccine has not made a noticeable impact on the Scarring Alopecia condition. However, this question needs more study and investigation.*

Q-Is there an increased risk of adverse events following the vaccine if you have any autoimmune disease?
A- *There is no evidence of this, the autoimmune disease does not seem to alter the adverse events.*

Q- Do you know how many Scarring Alopecia patients have been vaccinated? Would it be beneficial to track them through CARF or a FB group?
A- No, *we do not know the number of patients, and it is a wonderful idea to keep track of this.*

Q-Two different times, I had injection site pain from flu shots that lasted three months. Would that make a doctor hesitant to give me the second shot? Have you heard of cases like this?
A- *Pain at the injection site is normal, but for three months is unusual. However, a doctor probably would not be hesitant, and it is recommended to still get the vaccine.*

Q-If having LPP is a result of a high immune system, does that mean that we have a lower chance of getting COVID19?
A- *No, there is the same risk for getting COVID19.*

Q- I did not have a single side effect, not even a sore arm after receiving 2 doses of the Pfizer vaccine. I am 69 years old, and how do I know that the vaccine prompted an adequate immune response?
A- *It is still effective 95% of the time, and not everyone gets side effects. It is possible to have antibodies checked.*

Q-Based on how they work, which COVID19 vaccine would you recommend for scarring alopecia patients Moderna, Pfizer, or Johnson and Johnson?
A- *The sooner you get vaccinated, you reduce the risk of getting the disease, so you should receive whichever vaccine is available. Sometimes, you may not have a choice.*

Q- It is so hard to get a vaccine that it seems we need to take whatever we can get. Should we be disappointed if we are stuck with the J&J, at its much lower effectiveness?
A- *This is a very effective vaccine and reduces the chance of severe disease just like the mRNA vaccines. It is still an excellent vaccine. The vaccine is one piece of the puzzle for keeping yourself safe and healthy, so a 70% vaccine is still great.*

Q- I have FFA. If I have a choice, which vaccine would you recommend I should get?
A- *Right now, it is whatever vaccine is available so you should not be preoccupied about which one you get. This is an ongoing process with the vaccines, and it may need boosters.*

Q- I am scheduled for my 1st shot next week. The questionnaire asked if I had an autoimmune condition. Should I have said yes? (with LPP). Also, please confirm that you recommended LPP patients to get the shot and not to expect worsening in LPP?
A- *LPP should be marked as an autoimmune condition, and we do not expect that the autoimmune condition will get worse.*

Q- What is the effectiveness of the vaccine for someone 94 years old? Is it still 95%?
A- *You should get the vaccine because you are at high risk, and as far as right now, there appears to be no major change in effectiveness?*

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