Generelle Paper zu Post Vac

(generelle Informationen, Komplexität des Syndroms, wissenschaftliche Ansätze, Parallelen zu Post Covid)

COVI – Ausschuss – Europäisches Parlament:

„Ähnliche Symptome wie Long COVID wurden nach der Impfung festgestellt, was eine seltene, aber reale Bedrohung für Patienten darstellt. Das Spike-Protein, das auf SARS-CoV-2 und in den Impfstoffen gefunden wurde, scheint in der Forschung zu Long COVID eine zentrale Rolle zu spielen." 09.03.2024

https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740077/IPOL_STU(2023)740077(SUM01)_DE.pdf?fbclid=PAZXh0bgNhZW0CMTEAAaZp2nsIs8JrLo0FHxPcUvd2XKQU1HVzkLeK4YQiUyEdMjc3NHvtoOu63ow_aem_CWn-XW3-6xNFCAhRleiEKQ

Long Covid Plattform:

Post-Vac-Syndrom wird zunehmend erforscht

https://www.long-covid-plattform.de/post-vac-syndrom-wird-zunehmend-erforscht

https://www.long-covid-plattform.de/post-vac-syndrom

(basierend auf den Quellen des BMG und des PEI)

GBA Richtlinien

In Kraft getreten am: 09.05.2024 ; Fassung vom: 21.12.2023 Banz AT 08.05.2024 B1

https://www.bundesgesundheitsministerium.de/ministerium/meldungen/3-runder-tisch-long-covid

https://www.g-ba.de/richtlinien/141/

Gemeinsamer Bundesausschuss zu „Long-Covid Richtlinie G-BA und ihre Umsetzung"

- GBA-Richtlinie wurde am 21.12.2023 beschlossen, Frühling 2024 rechtlich durchgesetzt und stellt konkrete Anforderungen an die Versorgung dar (siehe §1 GBA Richtlinie)
- Soll eine strukturierte Diagnostik ermöglichen (siehe §1 GBA Richtlinie)
- Bezieht sich auf Long Covid und Post Covid nach Infektion ME CFS **und auch Post Vac (siehe §2 GBA Richtlinie)**
  „Die Richtlinie gilt sowohl für Betroffene von Long COVID oder **bei Erkrankung nach einer COVID-19-Impfung** als auch für Patientinnen und Patienten, deren Erkrankungen ähnliche Ursachen oder Symptome wie Long COVID aufweisen. Dazu zählt zum Beispiel ME/CFS.

Beschrieben sind so genannte Versorgungspfade, also der Ablauf der medizinischen Behandlung. Vorgesehen ist auch eine ärztliche Ansprechperson. Sie übernimmt die notwendige spezifische Koordination bei Diagnostik und Therapie. So werden die bestehenden ambulanten Strukturen und Angebote je nach Schweregrad und Komplexität der Erkrankung bedarfsgerecht genutzt und die richtigen Gesundheitsberufe eingebunden.“ (https://www.bundesgesundheitsministerium.de/ministerium/meldungen/3-runder-tisch-long-covid)

- Es handelt sich um Richtlinien, keine Leitlinien, an GBA-Beschluss muss sich gehalten werden

Science Magazine

Parallelen Post Covid und Post Vac- Autoimmune Reaktionen, Nervenschäden

https://www.science.org/content/article/rare-link-between-coronavirus-vaccines-and-long-covid-illness-starts-gain-acceptance

https://www.science.org/content/article/rare-cases-coronavirus-vaccines-may-cause-long-covid-symptoms

Weitere wichtige wissenschaftliche Paper zum Post Vac Syndrom generell:

Adverse effects of COVID-19 mRNA vaccines: the spike hypothesis

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9021367/

Characteristics of Persistent Symptoms Manifested after SARS-CoV-2 Vaccination: An Observational Retrospective Study in a Specialized Clinic for Vaccination-Related Adverse Events

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10674662/

Chronic Fatigue and Dysautonomia following COVID-19 Vaccination Is Distinguished from Normal Vaccination Response by Altered Blood Markers

https://www.mdpi.com/2076-393X/11/11/1642

Clinical and Diagnostic Features of Post-Acute COVID-19 Vaccination Syndrome (PACVS)

https://www.mdpi.com/2076-393X/12/7/790

(Post Vac als Verbindung von Dysautonomien = ME CFS; SFN ; MCAS, POTS, autoimmunen Reaktionen und Entzündungsprozessen)

Correlation between COVID-19 vaccination and inflammatory musculoskeletal disorders

https://www.medrxiv.org/content/10.1101/2023.11.14.23298544v1

COVID-19-Impfung-assoziierteanhaltende Kopfschmerzen: Wie einordnen?

https://link.springer.com/content/pdf/10.1007/s00482-022-00687-1.pdf

COVID-19, post-acute COVID-19 syndrome (PACS, “long COVID”) and post-COVID-19 vaccination syndrome (PCVS, “post-COVIDvac-syndrome”): Similarities and differences:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10154064/

COVID-19 vaccines and adverse events of special interest: A multinational Global Vaccine Data Network (GVDN) cohort study of 99 million vaccinated individuals

https://www.sciencedirect.com/science/article/pii/S0264410X24001270?via%3Dihub

Dysautonomia in Children with Post-Acute Sequelae of Coronavirus 2019 Disease and/or Vaccination

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9607162/

Hypocortisolemic ASIA: a vaccine- and chronic infection-induced syndrome behind the origin of long COVID and myalgic encephalomyeliti

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11263040/

Molecular Mimicry of the Viral Spike in the SARS-CoV-2 Vaccine Possibly Triggers Transient Dysregulation of ACE2, Leading to Vascular and Coagulation Dysfunction Similar to SARS-CoV-2 Infection

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10222462/

NEURO-COVAX: An Italian Population-Based Study of Neurological Complications after COVID-19 Vaccinations

https://www.mdpi.com/2076-393X/11/10/1621

Neurological side effects of SARS-CoV-2 vaccinations

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8653194/

Post–COVID-19 vaccine small-fiber neuropathy and tinnitus treated with plasma exchange

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9537871/

Post COVID und Post-Vakzin-Syndrom: Die Pandemie nach der Pandemie

https://www.aerzteblatt.de/archiv/230502/Post-COVID-und-Post-Vakzin-Syndrom-Die-Pandemie-nach-der-Pandemie

Post-Vaccination Syndrome: A Descriptive Analysis of Reported Symptoms and Patient Experiences After Covid-19 Immunization

Yale University um Prof. Dr. Iwasaki

https://www.medrxiv.org/content/10.1101/2023.11.09.23298266v1?fbclid=IwAR3NZA_-wdYfk3F8cnQ0sKjjjY9tmgMT2uuABn62T8AgdsjAvj0tgG3zsmc

SARS-CoV-2 vaccination complicated by small fiber neuropathy, mast cell activation syndrome, and pericarditis

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10681913/

Severity of neurological Long-COVID symptoms correlates with increased level of autoantibodies targeting vasoregulatory and autonomic nervous system receptors

https://www.sciencedirect.com/science/article/abs/pii/S1568997223001799

Small fiber neuropathy with long-term, multifocal paresthesias after a SARS-CoV-2 vaccination

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10040496/

Small Fiber Neuropathy Associated with Post-COVID-19 and Post-COVID-19 Vaccination Arthritis: A Rare Post-Infective Syndrome or a New-Onset Disease?

https://www.mdpi.com/2075-4426/14/8/789

Status migrainosus: a potential adverse reaction to Comirnaty (BNT162b2, BioNtech/Pfizer) COVID-19 vaccine-a case report

https://pubmed.ncbi.nlm.nih.gov/34807361/

Strategies for the Management of Spike Protein-Related Pathology

https://www.mdpi.com/2076-2607/11/5/1308

The impact of BNT162b2 mRNA vaccine on adaptive and innate immune responses

https://www.sciencedirect.com/science/article/pii/S1521661623005259?via%3Dihub

The rationale for the treatment of long-Covid symptoms – A cardiologist's view

https://www.frontiersin.org/journals/cardiovascular-medicine/articles/10.3389/fcvm.2022.992686/full

The risks of POTS after COVID-19 vaccination and SARS-CoV-2 infection: more studies are needed

https://www.nature.com/articles/s44161-022-00180-z

Sonstige wichtige Artikel im Zusammenhang mit Post Vac

Ärzteblatt:

Post-Vac-Syndrom: Seltene Folgen nach Impfung

https://www.aerzteblatt.de/archiv/225071/Post-Vac-Syndrom-Seltene-Folgen-nach-Impfung

Apotheken-Umschau :

CORONA-IMPFUNG Post Vac & Co.: Was wir über die Nebenwirkungen der Covid-19-Impfung wissen

https://www.apotheken-umschau.de/krankheiten-symptome/infektionskrankheiten/coronavirus/impfung-covid-19-nebenwirkungen-post-vac-syndrom-894379.html

Bloomberg:

Largest Covid Vaccine Study Yet Finds Links to Health Conditions

- Small increases in neurological, blood, heart-related issues
- Looks at medical problems among 99 million immunized people

https://www.bloomberg.com/news/articles/2024-02-19/largest-covid-vaccine-study-yet-finds-links-to-health-conditions

direkt zum Studienpaper:

https://www.sciencedirect.com/science/article/pii/S0264410X24001270?via%3Dihub

Deutschlandfunk:

Völliges Durcheinander im Herz-Kreislauf-System

https://www.deutschlandfunkkultur.de/corona-impfschaeden-schwerer-weg-zur-anerkennung-dlf-kultur-7307218d-100.html

Long Covid Plattform:

Post-Vac-Syndrom wird zunehmend erforscht

https://www.long-covid-plattform.de/post-vac-syndrom-wird-zunehmend-erforscht

Spektrum:

POST-VAC-SYNDROM: Was hinter schweren Impfkomplikationen steckt

https://www.spektrum.de/news/post-vac-wie-gefaehrlich-die-impfungen-wirklich-sind/2114313

SWR:

Post Vac Awareness Day – Mehr Aufmerksamkeit für Corona-Impfgeschädigte

https://www.swr.de/swraktuell/radio/post-vac-awareness-day-mehr-aufmerksamkeit-fuer-corona-impfgeschaedigte-100.html

SWR:

Prof. Bernhard Schieffer | Kardiologe | Was bislang über das Post Vac Syndrom bekannt ist

https://www.ardmediathek.de/video/swr1-leute/prof-bernhard-schieffer-oder-kardiologe-oder-was-bislang-ueber-das-post-vac-syndrom-bekannt-ist/swr/Y3JpZDovL3N3ci5kZS9hZXgvbzE3OTg1OTc

SWR Nachtcafe ab Minute 27

Was von Corona bleibt

https://www.ardmediathek.de/video/nachtcafe/was-von-corona-bleibt/swr/Y3JpZDovL3N3ci5kZS9hZXgvbzIwNjkyMTU

Tagesschau:

Post-Vac Syndrom Krank nach der Corona- Impfung

https://www.tagesschau.de/wissen/gesundheit/post-vaccine-syndrom-corona-impfung-101.html

ZDF Heute:

Corona-Impfschäden - Laschet: "Es gibt auch Nebenwirkungen"

https://www.zdf.de/nachrichten/politik/corona-impfschaden-laschet-lauterbach-haftung-100.html ; https://www.youtube.com/watch?v=c8hpUhMzIxU

ZDF Heute:

Post-Vac und Long Covid

Lauterbach verspricht Hilfe nach Impfschäden

https://www.zdf.de/nachrichten/politik/corona-hilfe-impfschaeden-long-covid-lauterbach-100.html

ZDF Heute:

Post-Vac-Syndrom: Jung, sportlich und jetzt krank nach Corona-Impfung

https://www.youtube.com/watch?v=qrbG5gXOOgM

ZDF Länderspiegel:

ME CFS die unsichtbare Krankheit (auch Fallbeispiele nach Impfung)

https://www.zdf.de/politik/laenderspiegel/me-cfs-die-unsichtbare-krankheit-100.html

EMA – Datenbank – Millionen Meldungen europaweit

https://www.adrreports.eu/de/search_subst.html#

https://www.ema.europa.eu/en/human-regulatory-overview/public-health-threats/coronavirus-disease-covid-19/covid-19-medicines#safety-updates-for-authorised-covid-19-vaccines-section

Sicherheitsberichte Paul Ehrlich Institut

https://www.pei.de/DE/newsroom/dossier/coronavirus/sicherheitsberichte/archiv-berichte.html

Zusammenfassender und letzter Bericht des PEIs bis zum 31.03.2023 (danach Einstellung der Berichte)

https://www.pei.de/DE/newsroom/dossier/coronavirus/sicherheitsbericht-covid-19-impfstoffe-aktuell.html

Universität Halle schließt schützenden Effekt vor Long Covid durch Impfung aus

https://idw-online.de/de/news820520

Wiederholte Impfungen führen zu Immuntoleranz gegenüber Spike Protein

https://pubmed.ncbi.nlm.nih.gov/37243095/

Weitere wichtige Paper unterteilt nach Beschwerden, die mit dem Post Vac Syndrom in Verbindung stehen (Auswahl von dutzenden Papern)

Audio-vestibulare Probleme

Audiovestibular adverse events following COVID-19 vaccinations

https://pubmed.ncbi.nlm.nih.gov/38395721/

Post–COVID-19 vaccine small-fiber neuropathy and tinnitus treated with plasma exchange

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9537871/

Autoimmune Reaktionen mit GPCR Autoantikörper (wie bei Post Covid)

Autoantibody Release in Children after Corona Virus mRNA Vaccination: A Risk Factor of Multisystem Inflammatory Syndrome?

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8618727/

Autoimmunity in Syndromes of Orthostatic Intolerance: An Updated Review

https://www.mdpi.com/2075-4426/14/4/435

Chronic Fatigue and Dysautonomia following COVID-19 Vaccination Is Distinguished from Normal Vaccination Response by Altered Blood Markers

https://www.mdpi.com/2076-393X/11/11/1642

Clinical and Diagnostic Features of Post-Acute COVID-19 Vaccination Syndrome (PACVS)

https://www.mdpi.com/2076-393X/12/7/790

COVID-19, G protein-coupled receptor, and renin-angiotensin system autoantibodies: Systematic review and meta-analysis

https://www.sciencedirect.com/science/article/abs/pii/S1568997223001362?via%3Dihub

In Silico Discovery of GPCRs and GnRHRs as Novel Binding Receptors of SARS-CoV-2 Spike Protein Could Explain Neuroendocrine Disorders in COVID-19 - PubMed (nih.gov)

https://www.mdpi.com/2076-393X/10/9/1500

Long-Term Safety Analysis of the BBV152 Coronavirus Vaccine in Adolescents and Adults: Findings from a 1-Year Prospective Study in North India

https://link.springer.com/article/10.1007/s40264-024-01432-6

"Multisystem Inflammatory Syndrome in Children"-Like Disease after COVID-19 Vaccination (MIS-V) with Potential Significance of Functional Active Autoantibodies Targeting G-Protein-Coupled Receptors (GPCR-fAAb) for Pathophysiology and Therapy

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10741397/

Post–COVID-19 vaccine small-fiber neuropathy and tinnitus treated with plasma exchange

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9537871/

reCOVer - Autoantikörper gegen G-Protein gekoppelte Rezeptoren als schädliches Agens für die Mikrozirkulation als Ursache für die Symptompersistenz in "Long-Covid"

https://www.gesundheitsforschung-bmbf.de/de/recover-autoantikorper-gegen-g-protein-gekoppelte-rezeptoren-als-schadliches-agens-fur-die-14575.php

Sequence similarities in SARS-CoV-2 Spike Protein and Human Muscarinic receptors as the basis of Autoimmunity and Symptomology in Post-Acute Sequelae COVID-19

https://www.researchgate.net/publication/378306833_Sequence_similarities_in_SARS-CoV-2_Spike_Protein_and_Human_Muscarinic_receptors_as_the_basis_of_Autoimmunity_and_Symptomology_in_Post-Acute_Sequelae_COVID-19

Severity of neurological Long-COVID symptoms correlates with increased level of autoantibodies targeting vasoregulatory and autonomic nervous system receptors

https://www.sciencedirect.com/science/article/abs/pii/S1568997223001799

The α2A-adrenergic receptor (ADRA2A) modulates susceptibility to Raynaud’s syndrome

https://www.medrxiv.org/content/10.1101/2023.10.04.23296526v2

The onset of de novo autoantibodies in healthcare workers after mRNA based anti-SARS-CoV-2 vaccines: a single centre prospective follow-up study

https://www.tandfonline.com/doi/full/10.1080/08916934.2023.2229072#abstract

Weitere autoimmune Krankheitsbilder

(autoimmune Reaktionen ausgelöst durch Covid – Impstoffe u.a. durch molekulare Mimikry, Spikeprotein, Bindung an ACE2 Rezeptoren, Zytokinströme wie bei GPCR - autoimmunen Erkrankungen bei Post Vac)

Autoimmune adverse event following COVID-19 vaccination in Seoul, South Korea

https://www.jacionline.org/article/S0091-6749(24)00129-5/fulltext

Autoimmune and autoinflammatory conditions after COVID-19 vaccination. New case reports and updated literature review

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9399140/

Autoimmune and inflammatory thyroid diseases following vaccination with SARS-CoV-2 vaccines: from etiopathogenesis to clinical management

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9243876/

COVID-19, post-acute COVID-19 syndrome (PACS, “long COVID”) and post-COVID-19 vaccination syndrome (PCVS, “post-COVIDvac-syndrome”): Similarities and differences:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10154064/

Do COVID-19 RNA-based vaccines put at risk of immune-mediated diseases? In reply to "potential antigenic cross-reactivity between SARS-CoV-2 and human tissue with a possible link to an increase in autoimmune diseases"

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7833091/

Multiple sclerosis (MS) and neuromyelitis optica spectrum disorder (NMOSD) following COVID-19 vaccines: A systematic review

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9844421/

New-onset autoimmune phenomena post-COVID-19 vaccination

https://onlinelibrary.wiley.com/doi/10.1111/imm.13443

Postural orthostatic tachycardia syndrome after mRNA COVID-19 vaccine

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9308031/

Postural orthostatic tachycardia syndrome-like symptoms following COVID-19 vaccination: An overview of clinical literature

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10357168/

The role of antibodies in small fiber neuropathy: a review of currently available evidence

https://www.degruyter.com/document/doi/10.1515/revneuro-2024-0027/html#

Durchblutungsstörungen

COVID-19, post-acute COVID-19 syndrome (PACS, “long COVID”) and post-COVID-19 vaccination syndrome (PCVS, “post-COVIDvac-syndrome”): Similarities and differences

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10154064/

COVID-19, vaccines and deficiency of ACE2 and other angiotensinases. Closing the loop on the "Spike effect"

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9217159/

Long COVID is primarily a Spike protein Induced Thrombotic Vasculitis

https://europepmc.org/article/PPR/PPR662515

Molecular Mimicry of the Viral Spike in the SARS-CoV-2 Vaccine Possibly Triggers Transient Dysregulation of ACE2, Leading to Vascular and Coagulation Dysfunction Similar to SARS-CoV-2 Infection

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10222462/

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) and Comorbidities: Linked by Vascular Pathomechanisms and Vasoactive Mediators?

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10224216/

Myocarditis, Coagulopathy, and Small Fibre, Sensory, and Multiple Cranial Nerve Neuropathy Complicating BNT162b2 Vaccination: A Case Report

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10981078/

Pfizer-biontech COVID-19 RNA vaccination induces phosphatidylserine autoantibodies, cryoglobulinemia, and digital necrosis in a patient with pre-existing autoimmunity

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8486180/

reCOVer - Autoantikörper gegen G-Protein gekoppelte Rezeptoren als schädliches Agens für die Mikrozirkulation als Ursache für die Symptompersistenz in "Long-Covid"

https://www.gesundheitsforschung-bmbf.de/de/recover-autoantikorper-gegen-g-protein-gekoppelte-rezeptoren-als-schadliches-agens-fur-die-14575.php

Strategies for the Management of Spike Protein-Related Pathology

https://www.mdpi.com/2076-2607/11/5/1308

The α2A-adrenergic receptor (ADRA2A) modulates susceptibility to Raynaud's syndrome

https://www.medrxiv.org/content/10.1101/2023.10.04.23296526v2

Kardiologische Defizite

A case of fatal multi-organ inflammation following COVID-19 vaccination

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10027302/

A Case of Postural Orthostatic Tachycardia Syndrome Secondary to the Messenger RNA COVID-19 Vaccine

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8101507/

Apparent risks of postural orthostatic tachycardia syndrome diagnoses after COVID-19 vaccination and SARS-Cov-2 Infection

https://www.nature.com/articles/s44161-022-00177-8

Assessment of Myocardial 18F-FDG Uptake at PET/CT in Asymptomatic SARS-CoV-2-vaccinated and Nonvaccinated Patients

https://pubs.rsna.org/doi/10.1148/radiol.230743?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

Autoimmunity in Syndromes of Orthostatic Intolerance: An Updated Review

https://www.mdpi.com/2075-4426/14/4/435

Cardiac side effects of RNA-based SARS-CoV-2 vaccines: Hidden cardiotoxic effects of mRNA-1273 and BNT162b2 on ventricular myocyte function and structure

https://pubmed.ncbi.nlm.nih.gov/37828636/

Cardiovascular Complications of SARS-CoV-2 Vaccines: An Overview

https://pubmed.ncbi.nlm.nih.gov/34845662/#:~:text=SARS-CoV-2%20vaccines%20in%20general%20may%20cause%20thromboembolic%20events%2C,in%20younger%20adults%20after%20the%20second%20vaccination%20dose.

Circulating Spike Protein Detected in Post-COVID-19 mRNA Vaccine Myocarditis

https://pubmed.ncbi.nlm.nih.gov/36597886/

COVID-19 mRNA Vaccines: The Molecular Basis of Some Adverse Events

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10145134/

COVID-19, post-acute COVID-19 syndrome (PACS, “long COVID”) and post-COVID-19 vaccination syndrome (PCVS, “post-COVIDvac-syndrome”): Similarities and differences:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10154064/

COVID-19, vaccines and deficiency of ACE2 and other angiotensinases. Closing the loop on the "Spike effect"

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9217159/

Cytokinopathy with aberrant cytotoxic lymphocytes and profibrotic myeloid response in SARS-CoV-2 mRNA vaccine–associated myocarditis

https://www.science.org/doi/10.1126/sciimmunol.adh3455

Duration of SARS-CoV-2 mRNA vaccine persistence and factors associated with cardiac involvement in recently vaccinated patients

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10533894/

Dysautonomia in Children with Post-Acute Sequelae of Coronavirus 2019 Disease and/or Vaccination

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9607162/

Epidemiology, clinical ramifications, and cellular pathogenesis of COVID-19 mRNA-vaccination-induced adverse cardiovascular outcomes: A state-of-the-heart review

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8934717/

Fatal arrythmia in a young man after COVID-19 vaccination: An autopsy report

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10843519/

Four cases of cytokine storm after COVID-19 vaccination: Case report

https://www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2022.967226/full

Immune Response and Molecular Mechanisms of Cardiovascular Adverse Effects of Spike Proteins from SARS-CoV-2 and mRNA Vaccines

https://www.mdpi.com/2227-9059/11/2/451

Impfstoff-Myokarditis: Patienten haben vorübergehend ungebundene Spike-Proteine im Blut

https://www.aerzteblatt.de/nachrichten/140039/Impfstoff-Myokarditis-Patienten-haben-voruebergehend-ungebundene-Spike-Proteine-im-Blut

Intramyocardial Inflammation after COVID-19 Vaccination: An Endomyocardial Biopsy-Proven Case Series

https://www.mdpi.com/1422-0067/23/13/6940

Long term follow up and outcomes of Covid-19 vaccine associated myocarditis in Victoria, Australia: A clinical surveillance study

https://www.sciencedirect.com/science/article/abs/pii/S0264410X23015165

Molecular Mimicry of the Viral Spike in the SARS-CoV-2 Vaccine Possibly Triggers Transient Dysregulation of ACE2, Leading to Vascular and Coagulation Dysfunction Similar to SARS-CoV-2 Infection

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10222462/

Myocarditis, Coagulopathy, and Small Fibre, Sensory, and Multiple Cranial Nerve Neuropathy Complicating BNT162b2 Vaccination: A Case Report

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10981078/

Postural orthostatic tachycardia syndrome after mRNA COVID-19 vaccine

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9308031/

Postural orthostatic tachycardia syndrome-like symptoms following COVID-19 vaccination: An overview of clinical literature

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10357168/

Recurrent cardiac tamponade following coronavirus disease 2019 mRNA vaccination: A case report

https://www.sciencedirect.com/science/article/pii/S1054880724000644?via%3Dihub#fig0001

Relapsing myocarditis following initial recovery of post COVID-19 vaccination in two adolescent males – Case reports

https://www.sciencedirect.com/science/article/pii/S2590136223000591?via%3Dihub

SARS-CoV-2 vaccination complicated by small fiber neuropathy, mast cell activation syndrome, and pericarditis

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10681913/

Spike Protein Impairs Mitochondrial Function in Human Cardiomyocytes: Mechanisms Underlying Cardiac Injury in COVID-19
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