



**COVID 19; WHILE THE YOUNGS ACT AS VENDORS, VACCINATION CAUSED
ARTHRITIC FLARES: A DOUBLE TRAGEDY SCENARIO FOR THE AGED. A
CLINICAL BASED REVIEW**

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ABSTRACTS

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. While most people especially, young ones may suffer very mild symptoms and recover without any treatment, older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. These younger ones may however act as vendors to the older ones. Vaccines for the disease have been associated with arthritis and arthritic flares, disorders commoner with the older ones. This clinical based review arose from our clinical observations during the Christmas holidays of the past years, 2020 to 2022. Within the period under review a total of 6 suspected cases of COVID 19 were admitted under extreme emergencies and requiring oxygen. Age ranges were 51 to 79 years with 5 males and a female. They had all been visited by their children from either Lagos or Europe. We also recorded increased cases of arthritis and arthritic flares among those that received the covid 19 vaccines (Oxford Astra Zennica). A search through goggle, goggle scholar and Pubmed-medline revealed a good number of publications with evidence of stimulation of immunogenicity complex by Covid 19 vaccines. Covid 19 vaccinations triggered latent autoantibodies to cause arthritis and arthritic flares on one hand while most young ones who were officially excluded or shied away from vaccination possibly acted as vendors for the disease, a double scenario tragedy for the old. The Covid 19 era is though dwindling down, there is an urgent need to review policies based on the above findings.

KEYWORDS: Covid 19; Vaccines; Aged; Young ones; Vendors; Arthritis; Arthritic flares.

INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention.

Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. Anyone can get sick with COVID-19 and become seriously ill or die at any age (WHO, 2023).

Coronavirus\ disease 2019 (COVID-19) has been the most important global issue since December 2019. Although the clinical course of COVID-19 is known to be milder in children than in adults, associated hospitalizations among children have increased since the emergence of contagious severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants and the achievement of a high vaccination rate in adults (Choi et al., 2022).

The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. Protect yourself and others from infection by staying at least 1 metre apart from others, wearing a

properly fitted mask, and washing your hands or using an alcohol-based rub frequently. Get vaccinated when it's your turn and follow local guidance. (WHO, 2023).

SARS-CoV-2, a virus belonging to the large family of coronavirus, aroused great interest following the outbreak of this new strain reported in 2019, in Wuhan China. Its clinical spectrum is highly variable, ranging from a self-limited disease to an acute respiratory distress syndrome with systemic clinical manifestations (COVID-19), in which the immune system plays a key role in the pathophysiology of this disease and in its severity; several studies show the prevalence of some autoimmune markers suggesting that they may lead to autoimmune states (Montaño-Armendáriz *et al.*, 2023).

Coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to an unprecedented setback for global economy and health (Chen *et al.*, 2022).

The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a flexed elbow, and to stay home and self-isolate until you recover if you feel unwell. (WHO, 2023).

Arthritis can be defined as a disease of the bony joints due to inflammation of the joints causing excruciating pains, fever, tenderness, swelling, reddening and disability. Arthritic flare can further be extrapolated to mean a recurring and worsening arthritis in a person that was previously in a remission or who hitherto has not had an episode of attack for a long while.

An additional autoimmunity manifestation may be one of the common initial symptoms in COVID-19 patients, anosmia, the complete loss of the ability to sense smell, and other olfactory alterations. We summarize current knowledge on principal mechanisms that may contribute to the development of autoimmunity in the disease: the ability of SARS-CoV-2 to hyper-stimulate the immune system, induce excessive neutrophil extracellular traps formation with neutrophil-associated cytokine responses and the molecular resemblance between self-components of the host and the virus (Dotan *et al.*, 2021).

Vaccination is one of the most effective interventions to substantially reduce severe disease and death due to SARS-CoV-2 infection. Vaccination programmes are being rolled out globally, but most of these vaccines have been approved without extensive studies on their side-effects and efficacy. Recently, new-onset autoimmune phenomena after COVID-19 vaccination have been reported increasingly (e.g. immune thrombotic thrombocytopenia, autoimmune liver diseases, Guillain-Barré syndrome, IgA nephropathy, rheumatoid arthritis and systemic lupus erythematosus). Molecular mimicry,

the production of particular autoantibodies and the role of certain vaccine adjuvants seem to be substantial contributors to autoimmune phenomena. However, whether the association between COVID-19 vaccine and autoimmune manifestations is coincidental or causal remains to be elucidated (Chen *et al.*, 2022).

The post-acute sequelae of SARS-CoV-2, usually known as Long Covid Syndrome, are beginning to be better understood in terms of the disparities in immune responses seen in individuals with and without the condition. We anticipate that the knowledge gleaned from several COVID-19 investigations will be put to use in research on the inflammatory mechanisms implicated in serious and protracted illnesses, which is still a key unmet need (Ray and Mukherjee, 2023).

The most important strategy worldwide to protect the population was the development of vaccines to induce immunity to severe COVID-19; however, vaccines have also been shown to have the ability to produce autoimmune states in a small percentage of the world's population; nevertheless, the best strategy remains vaccination (Montaño-Armendáriz *et al.*, 2023).

In Nigeria and perhaps most African nations, Covid 19 vaccination is yet to be fully accepted among the populace especially, youths and women. Officially, infants, children and adolescence are exempt from Covid 19 vaccination. These classes of Africans constitute the most mobile in terms of travelling. These groups during the festive periods like Christmas usually will come from the big cities like Lagos and meet their aged relatives, grand and great grand parents in the villages. An intriguing possibility is the vendor transmissions of Covid 19 diseases from these healthy looking individuals to the vulnerably aged or elderly ones.

Our Hospital Work/Clinical Observations

During the active period of Covid 19 in the years 2020 to 2022, our hospital admitted and managed a total of 6 patients with obviously suspected cases of Covid 19. They all presented with severe respiratory distress and an average SPO2 of less than 70% thus were all placed on intranasal oxygen of above 10Litres per minute. Their age ranges were 51 to 79years with 5 males and a female. They had all been visited by their children from either Lagos or Europe. None of their young ones had received Covid 19 vaccinations and of course were not even willing to do so at a later date. One of the patients, aged 79, later developed anuria within four hours stay in hospital and was thus referred to Nnamdi Azikiwe University Teaching Hospital, Nnewi where he later gave up the ghost. The only female among them who was 75 and referred from a peripheral health facility died within 2 hours of being in hospital despite all medications and hyperventilation. The rest four patients with ages 51, 55, 60 and 64 pulled through and were all discharged from hospital in good state of health. It is worthy of note that all the six patients were all known

hypertensives. The 79 year old man in addition had complications of heart failure secondary to his hypertensive heart disease while the only female in addition had protracted diabetic arthropathy.

The hospital witnessed obvious increased cases in arthritis and arthritic flare post vaccination against Covid 19. These conditions were observed within 24 to 72 hours post vaccinations (See Figures 1-3). The disorders were very responsive to non steroidal antiinflammatory drugs (NSAIDS) and antibiotics.



Fig 1: A typical arthritic flare seen 48hrs after Covid 19 vaccination.



Fig 2: Another arthritic flare on the right wrist seen 36hrs post covid 19 vaccination.



FIG 3: Post treatment of the right wrist arthritic flare.

DISCUSSION

Nigerian CDC has just approved COVID-19 vaccines for 16-year olds on educational grounds. The agency had said the vaccines can only be administered to persons aged 18 years and older including pregnant women and lactating mothers, but the new waiver increases the number of eligible persons. Most women and young men below 50years are however very skeptical about the vaccination thus shy away. Various social media photos and videos showing foreign protests and rejections abound thus making matters worse. The older persons who are perhaps more vulnerable to the disease now coming down with disabling complications from vaccination will further worsen the control of this pandemic.

Vaccine-induced immunity is essential for controlling the COVID-19 pandemic. Data on humoral and cellular immunogenicity and safety of different SARS-CoV-2 vaccines in patients with autoimmune rheumatic and musculoskeletal diseases (RMDs) are limited. In a single centre observational study post COVID 19 vaccination, Szebeni et al 2022, demonstrated that disease-specific comparison showed that antibody response at four months was higher in spondylarthropathies compared to rheumatoid arthritis and autoimmune RMDs. Risk factors for reduced immunogenicity included longer disease duration, positive immunoserological profile and anti-CD20 therapy of patients.

Autoimmunity may be generated by a variety of factors by creating a hyper-stimulated state of the immune system. It had been established long ago that viruses are a substantial component of environmental factors that contribute to the production of autoimmune antibodies, as well as autoimmune diseases. Epstein-Barr virus (EBV), cytomegalovirus (CMV) and human immunodeficiency virus (HIV) are viruses that withhold these autoimmune abilities. In a similar manner, SARS-CoV-2 may be counted to similar manifestations, as numerous records demonstrating the likelihood of COVID-19 patients to develop multiple types of autoantibodies and autoimmune diseases (Dotan et al., 2021). This earlier finding by these researchers portends even a greater issue for the aged as they are more likely to develop worsening autoimmunological conditions from both COVID 19 and its vaccination.

To buttress this scenario the more, an extensive work done in Italy among children with chronic immunological diseases exhibited no effect from COVID 19 exposure while Italian adult causality was about the highest in the entire globe (Miserocchi et al., 2020). While these children may latently pass these diseases to their grand-parents, they neither suffer the effects of COVID 19 nor the aftermath of its vaccinations. In a review of the literature on parents' decisions to vaccinate their children, we found that widespread vaccination was hampered by vaccine hesitancy, especially for children who play an important role in the coronavirus

transmission in both family and school (Pan et al., 2021). This same apathy towards vaccination is in place in Saudi Arabia (Almalki et al., 2022) and the Eastern Mediterranean (Khatatbeh et al., 2022). This narrative is not different in United Arab Emirates (Bourguiba et al., 2022).

Here really comes the main war against the aged, these children are the vendors, there is no comprehensive policy to vaccinate them, their parents would not even want them vaccinated and they rarely suffer any sickness arising from COVID 19. It is indeed more than a double tragedy scenario for the aged. The Covid 19 era is though dwindling down, there is an urgent need to review policies based on the above findings.

REFERENCES

1. Almalki OS, Alfayez OM, Al Yami MS, Asiri YA, Almohammed OA: Parents' Hesitancy to Vaccinate Their 5-11-Year-Old Children Against COVID-19 in Saudi Arabia: Predictors From the Health Belief Model *Front Public Health*, 2022 Jun 1; 10: 914691. doi: 10.3389/fpubh.2022.914691. eCollection 2022.PMID: 35719625
2. Bourguiba A, AbuHijleh S, Nached Y, Waleed D, Farghaly S, AlOlama F: Assessing Parents' Knowledge, Attitudes, and Practices Toward Vaccinating Children (Five to 15 Years Old) Against COVID-19 in the United Arab Emirates. *Cureus*, 2022 Dec. 17; 14(12): e32625. doi: 10.7759/cureus.32625. eCollection 2022 Dec
3. Chen Y, Xu Z, Wang P, Li XM, Shuai ZW, Ye DQ, Pan HF: New-onset autoimmune phenomena post-COVID-19 vaccination; *Immunology*, 2022 Apr; 165(4): 386-401. doi: 10.1111/imm.13443. Epub 2022 Jan 7.
4. Choi J. H Soo-Hang Choi , Ki Wook Yun: Risk Factors for Severe COVID-19 in Children: A Systematic Review and Meta-Analysis: *J Korean Med Sci.*, 2022 Feb 7; 37(5): e35: doi: 10.3346/jkms
5. Dotan A, Muller S, Kanduc D, David P, Halpert G, Shoenfeld Y: The SARS-CoV-2 as an instrumental trigger of autoimmunity. *Autoimmun Rev.*, 2021 Apr; 20(4): 102792. doi: 10.1016/j.autrev.2021.102792. Epub 2021 Feb 19.
6. Khatatbeh M, Albalas S, Khatatbeh H, Momani W, Melhem O, Al-Omari O, Tarhini Z, A'aqoah A, Al-Jubouri M, Nashwan A.J, Adwan A, Altaany Z, Nashwan A, Al-Waqfi K, Abuirsheid L, Ayasreh R, Al-Mutairi M, Al-Tammemi AB: Children's rates of COVID-19 vaccination as reported by parents, vaccine hesitancy, and determinants of COVID-19 vaccine uptake among children: a multi-country study from the Eastern Mediterranean Region. *BMC Public Health*, 2022 Jul 18; 22(1): 1375. doi: 10.1186/s12889-022-13798-2
7. Miserocchi E, Giuffrè C, Modorati GM, Cimaz R: Management of Juvenile idiopathic arthritis-associated uveitis during the COVID-19 pandemic in a pediatric referral center in Lombardy; *Ocul*

- Immunol Inflamm, 2020 Nov 16; 28(8): 1305-1307. doi: 10.1080/09273948.2020.1800752. Epub 2020 Sep 25.
8. Montaña-Armendáriz N, Zamudio-Cuevas Y, Fernández-Torres J, Martínez-Flores K, Luján-Juárez IA: [Importance of autoimmunity induced by SARS-CoV-2 and development of post-vaccination autoimmune diseases]. *Rev Alerg Mex*, 2023 Jan 4; 69(2): 78-88. doi: 10.29262/ram.v69i2.1153
 9. Pan F, Zhao H, Nicholas S, Maitland E, Liu R, Hous Q : Parents' Decisions to Vaccinate Children against COVID-19: A Scoping Review. *Vaccines (Basel)*, 2021 Dec 14; 9(12): 1476. doi: 10.3390/vaccines9121476.
 10. Ray SK and Mukherjee S: Immunological Facet and Inception after Post-COVID-19 Vaccination: *Infect Disord Drug Targets*, 2023 Apr 6. doi: 10.2174/1871526523666230406100146. Online ahead of print.
 11. Szebeni GJ, Gémes N, Honfi D, Szabó E, Neuperger P, Balog JA, Nagy LI, Szekanecz Z, Puskás LG, Toldi G, Balog A: Humoral and Cellular Immunogenicity and Safety of Five Different SARS-CoV-2 Vaccines in Patients With Autoimmune Rheumatic and Musculoskeletal Diseases in Remission or With Low Disease Activity and in Healthy Controls: A Single Center Study; *Front Immunol*, 2022 Mar 31; 13: 846248. doi: 10.3389/fimmu.2022.846248. eCollection 2022.
 12. WHO: Current Overview on Coronavirus 2023. Accessed 12th September, 2023.