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Vaccinating our children: Is there an emergency warranting a rush to judgment?

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... this Journal supports informed decision-making by patients and does not have a position regarding vaccination. We publish this Editorial by Dr Blum to help inform individual decision-making by readers'

I feel that chiropractors need to be more educated and responsible in what they promote and share than any other healthcare practitioner. We are really very lucky to be participants within this paradigm of care and have a duty to our patients and colleagues to be aware of the research nuances when if comes to COVID-19 and vaccination.

Never before has this been such a crucial responsibility. So what I want to share is a bit of both sides of the coin when it comes to vaccination of our children population.

From my personal view, which is based on my patients and the people I know outside my practice, this current Omicron variant just doesn't seem that severe. Highly transmittable, but I don't know anyone needing hospitalisation, and especially children seem the least affected. Nevertheless the whole point of research is to bring all the data together beyond anyone's personal sphere.

So while I look to the research to gain a better perspective at the same time I need to be cognisant of researcher bias and what they publish. Most commonly it is anticipated that researchers that disclose grant funding from pharmaceutical companies producing vaccines would not likely produce research that undermines the effectiveness of vaccines. So while there is hope that researchers hold themselves to higher noble standards still all research should to be considered with a wide-angle lens considering who is producing the research.

What evidence is there currently that suggests that children should be vaccinated? We need to temper this question with the understanding that it takes time to gather data, write the research

paper, go through an accelerated peer review (if lucky), and then get the article released. So since COVID-19 is constantly mutating what may have been the Omicron variant in December 2021 – February 2022 is not what we are experiencing currently. Still we need to look somewhere in order to help make our evidence based decisions and the published research is the most likely place.

Taking into account that the Delta variant and Omicron of December 2021 are no longer around it is still of historical interest that, '*BNT162b2 vaccination reduced the risk of omicron-associated hospitalisation by two thirds among children 5 to 11 years of age. Although two doses provided lower protection against omicron-associated hospitalisation than against delta-associated hospitalisation among adolescents 12 to 18 years of age, vaccination prevented critical illness caused by either variant.*' (1)

A compelling study during Omicron predominance (March 2020-February 2022), found '*63% of hospitalised infants and children had no underlying medical conditions; infants aged <6 months accounted for 44% of hospitalisations, although no differences were observed in indicators of severity by age.*' (2)

For the time period of July 2021 through January 2022 Marks et al, found that '*the Omicron variant peak (7.1 per 100,000) was four times that of the Delta variant peak (1.8), with the largest increase observed among children aged 0-4 years*.' (3)

Xia et al determined that the safety of the '*inactivated COVID-19 vaccine BBIBP-CorV*' (4) was found to be '*safe and well tolerated at all tested dose levels in participants aged 3-17 years. BBIBP-CorV also elicited robust humoral responses against SARS-CoV-2 infection after two doses. Our findings support the use of a 4 μg dose and two-shot regimen BBIBP-CorV in phase 3 trials in the population younger than 18 years to further ascertain its safety and protection efficacy against COVID-19.*' (4)

So while most of those studies supporting and encouraging vaccination had authors disclosing conflict of interest due to receiving grants from various pharmaceutical companies that manufacture vaccines, other studies suggest that we may want to exercise some caution before rushing to vaccinate children between 2-5 years old. To have educated evidence based opinions we need to rely on the data and how that is gathered. Duan et al noted that '*the reporting and data sharing level of COVID-19 vaccine trials were not optimal. We hope that the reporting and data sharing of future trials will be improved. We recommend establishing a comprehensive, accurate data sharing system for future vaccine trials*.' (5)

To develop a rational for an intervention we must consider the risk benefit ratio of the intervention and what might happen if someone actually contracts the illness. Of interest is a systematic review and meta-analysis found '*… significantly more adverse events (AEs) were reported in vaccine groups compared with placebo groups, but the rates of reported AEs in the placebo arms were still substantial*.' (6)

If we factor in adverse events to vaccination then we have to place that also on the scale when weighing our decisions.

For instance in a study by Hause et al found that of children aged 5-11 years after vaccination with '*Pfizer-BioNTech COVID-19 vaccine; after dose 2, a total of 17,180 (57.5%) local and 12,223 systemic (40.9%) reactions (including injection-site pain, fatigue, or headache) were reported.*' (7) The authors cautioned that '*parents and guardians of children aged 5-11 years vaccinated with Pfizer-BioNTech COVID-19 vaccine should be advised that local and systemic reactions are expected after vaccination.*' (8) A study by Chen et al, investigating the protective aspect of the vaccine against contracting COVID-19 discovered that '*results suggest that vaccine recipients and COVID-19 patients in the paediatric age group will likely be more susceptible to vaccine breakthrough infections or reinfections due to the Omicron variant than previous variants*.' (8)

If we question a vaccine's associated adverse events and its protection against reinfection we must also explore the effectiveness of reducing a child's side effects from being infected by COVID-19. Fowlkes et al reported that of the children studied '*fully vaccinated participants with Omicron*

infection spent an average of one half day less sick in bed than did unvaccinated participants with Omicron infection.' (9)

So it appears that we have emerging evidence that is conflicting regarding vaccinating our children. We don't have long term studies because due to the nature of COVID–19 and its persistent mutating characteristics it is challenging to do enough rapid data gathering and assessing. Historically experimentation on children has always been challenging since children cannot offer informed consent and we rely on parents volunteering their children for these various studies.

We are left with 3 key questions:

1. What actual variant are we vaccinating our children for and is this variant responsive to the current vaccine?
2. How serious is it for children to have the current COVID-19 infection?
3. If a vaccine has significant adverse events, is not an effective tool for breakout infections, and can only offer minimal improvement over not being vaccinated, how important is it for healthcare providers to actively promote vaccinating children?

The great hope is that we can gain a greater picture and understanding of all the benefits and risks of vaccinating versus not vaccinating of our children for COVID-19. However since COVID–19 is constantly mutating is it also crucial that we are not mixing '*apples and oranges*' so that we are studying what is current and not a historical variant that is not really related to our current situation.

If we are going to be confidently recommending vaccinations then we should also have confirming strong published non-biased research to support these recommendations.

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References

1. Price AM, Olson SM, Newhams MM, et al; Overcoming COVID-19 Investigators. BNT162b2 Protection against the Omicron Variant in Children and Adolescents. N Engl J Med. 2022 May 19;386(20):1899-1909. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35353976/]

2. Marks KJ, Whitaker M, COVID-NET Surveillance Team, et al. Hospitalization of Infants and Children Aged 0-4 Years with Laboratory-Confirmed COVID-19 - COVID-NET, 14 States, March 2020-February 2022. MMWR Morb Mortal Wkly Rep. 2022 Mar 18;71(11):429-436. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35298458/]

3. Marks KJ, Whitaker M, et al.; COVID-NET Surveillance Team. Hospitalizations of Children and Adolescents with Laboratory-Confirmed COVID-19 - COVID-NET, 14 States, July 2021-January 2022. MMWR Morb Mortal Wkly Rep. 2022 Feb 18;71(7):271-278. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35176003/]

4. Xia S, Zhang Y, Wang Y, et al. Safety and immunogenicity of an inactivated COVID-19 vaccine, BBIBP-CorV, in people younger than 18 years: a randomised, double-blind, controlled, phase 1/2 trial. Lancet Infect Dis. 2022 Feb;22(2):196-208. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/34536349/]

5. Duan Y, Luo J, Zhao L, Zhang X, Miao J, Moher D, Bian Z. Reporting and data sharing level for COVID-19 vaccine trials: A cross-sectional study. EBioMedicine. 2022 Apr;78:103962. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35339894/]

6. Haas JW, Bender FL, Ballou S, Kelley JM, Wilhelm M, Miller FG, Rief W, Kaptchuk TJ. Frequency of Adverse Events in the Placebo Arms of COVID-19 Vaccine Trials: A Systematic Review and Meta-analysis. JAMA Netw Open. 2022 Jan 4;5(1):e2143955. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35040967/]

7. Hause AM, Baggs J, Marquez P, Myers TR, Gee J, Su JR, Zhang B, Thompson D, Shimabukuro TT, Shay DK. COVID-19 Vaccine Safety in Children Aged 5-11 Years - United States, November 3-December 19, 2021. MMWR Morb Mortal Wkly Rep. 2021 Dec 31;70(5152):1755-1760. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/34968370/]

8. Chen LL, Chua GT, Lu L, et al. Omicron variant susceptibility to neutralizing antibodies induced in children by natural SARS-CoV-2 infection or COVID-19 vaccine. Emerg Microbes Infect. 2022 Dec;11(1):543-547. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35084295/]

9. Fowlkes AL, Yoon SK, Lutrick K, et al. Effectiveness of 2-Dose BNT162b2 (Pfizer BioNTech) mRNA Vaccine in Preventing SARS-CoV-2 Infection Among Children Aged 5-11 Years and Adolescents Aged 12-15 Years - PROTECT Cohort, July 2021-February 2022. MMWR Morb Mortal Wkly Rep. 2022 Mar 18;71(11):422-428. [https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/35298453/]