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LETTER TO THE EDITOR – OPEN ACCESS

The mRNA COVID-19 Vaccination and the Mortality of Pediatric Vaccine Recipients, any Association?

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Dear Editor,

The COVID-19 vaccination is the current primary prophylaxis against COVID-19. Pediatric vaccination has just began after the first mRNA vaccine was approved for use in the pediatric group. Since the vaccine is new and the data on pediatric vaccination are limited, surveillance on vaccine safety and efficacy is required. Similar to vaccination in adults, post-vaccination complications are possible. The worst possible scenario is death caused by the vaccine. However, according to available data on vaccine safety for adolescents, only mild and moderate adverse effects were observed (1). Based on real-world data, emerging fatal cardiac problems among adolescent vaccine recipients is attracting attention of clinical scientists worldwide (2). Nevertheless, it should be emphasized that not all clinical disorders occurring during the post-COVID-19 vaccination period are directly caused by the vaccine.

Here, the authors share ideas and discuss observations on early local data on mRNA COVID-19 vaccination for the pediatric group from our settings in developing areas in Asia. In this setting, the COVID-19 vaccine has just been introduced for a few months, and children above 12 years old are also included as a target group. Regarding the local COVID-19 vaccination, there are several kinds of vaccines for local adults. According to the local public health system, local adults are vaccinated by inactivated viral vaccine or viral vector-based vaccine., Only mRNA COVID-19 vaccines are used for the pediatric group. Based on available data as of October, 6, 2021, there are already 74,501 doses of mRNA vaccine, of which 6,668 are the second doses, given to local children (for adults, mRNA COVID-19 is not locally used as already mentioned). Locally, all COVID-19 vaccinations are controlled and provided by governmental public health agencies and all vaccine recipients have to be registered before receiving the vaccine. The specific vaccine adverse effect surveillance system is locally used and all vaccine recipients have to be followed up by the local public healthcare team at the vaccination unit against any serious adverse effect based on the schedule for following the adverse effect of vaccination. Regarding serious adverse effects, there are no reports on the incidence. Serious side effects of the vaccine have never been reported. Regarding the mortality rates of the pediatric vaccine recipients within 1 month, there is local information on the death of a 12-years old child, 3 weeks after the first dose of vaccination, giving incident rate is 1.34 per 100,000 doses of vaccine. This case is a known diabetic case and the local official report concluded that the child did not die from the vaccine but died from diabetes and there was no cardiac pathology. For the pediatric group, the data on vaccine-related mortality rates are limited. The authors hereby emphasize that, COVID-19 vaccines do not cause mortality in childhood, based on the observations on available local data.

Due to available information on the zero incidence of severe adverse effects, it can confirm the safety of vaccination for children. Indeed, an underlying disease is a major factor in terms of being associated with adverse post-vaccination adverse impact. A condition with high blood viscosity might increase the risk of the vaccine causing the hyperviscosity problems (3). Mortality rates in the post-COVID-19 vaccination period are usually questionable. In the case of a personal illness, it is often difficult to conclude on the association with the vaccination. Some experts might suggest that children with an underlying disease should delay vaccination. In general, it is clinically recognized that any vaccine can cause serious adverse effects; it might be very rare, but it is not a "zero" risk, and mRNA vaccines are not exceptional for this. Anaphylaxis, syncope, a seizure are some examples of such serious adverse events. The relatively low total number of doses, based on the data fr om the early phase of pediatric vaccination may also be a factor.

A system is still needed to for monitor the safety of COVID-19 vaccines and and incidences may occur when there are a large number of vaccine recipients. Also, the incidence of cardiac adverse events after the second dose in childhood might be more than the first one. When there are more second-dose vaccine recipients, more data would be useful. For comparision, the serious adverse effect incidence in adults might be useful data. However, as already noted, no mRNA vaccine was provided for the adult population in the setting, so there are no data for comparison. Further studies are recommended in other settings where mRNA vaccine is used for both adults and children.

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