

Review of: "Side effects of COVID-19 vaccination in Pakistani population: A cross sectional study"

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Potential competing interests: No potential competing interests to declare.

Review of the paper: Side effects of COVID-19 vaccination in Pakistani population: A cross sectional study

The purpose of his study is to assess common or uncommon adverse events of the COVID-19 vaccines in the real world particularly in Pakistan in the objective to resolve the speculations associated with the vaccines. Today a lot of data on safety with the COVID19 vaccines have already been published either from randomized control study with more than 30 000 subjects in each arm or in real world with data issued from surveillance system such as VAERS or others. But these data are mainly for mRNA vaccines or vectored based vaccines largely used in occidental countries.

The characteristics of vaccination in Pakistan is the use of different vaccines

Major comments

In the abstract the objective is rather different than in the introduction : "to assess common or uncommon adverse events of the COVID-19 vaccines, data from real world experiences need to be evaluated to resolve the speculations associated with the vaccines" versus "The present study not only aims to assess the adverse reactions and the impacts of different factors in a relatively larger cohort, but also to compare the side effects and severity of COVID-19 before and after the vaccination ». It must be clearly stated as the title is more restrictive focused on side effects and not effectiveness.

Method: what is the hypothesis to calculate the number of patients to include in the study. Due to the different types of vaccines used this number of 385 seems to be rather low and to look for rare side-effects much more people have to be included. The objective is mainly to look at expected side effects such as local pain or swellings or systemic sides-effects ie fever, muscle pain etc which are more frequent.

In the questionnaire are they items on religious beliefs or political orientations, confidence in the governmental health system to cope with the epidemic etc. They have been described as important factors in the vaccine uptake and confidence in different countries. How long after the vaccination the questionnaire has been applied as the memory of the side-effects can be attenuated with time.

Results: the population analyzed is probably not representative of the general Pakistani population regarding gender, age and location. With regard to the very low number of people vaccinated with other vaccines than Sinovac, sinopharm and Pfizer-BioNetech it is not useful to include them in the figure1. The comparison between the different vaccines is not supported by a sufficient number of participants and the huge differences in the number of participants in each arm.

The rather young population in this study is not representative of the at-risk population as it is for the oldest. By the way it is difficult to assess the effectiveness to avoid hospitalization or death

Minor Comments

Results 1162 questionnaires have been returned, out how many questionnaires to give an idea on the rate of answers

What is the reason to look at blood groups as a factor of side-effects?

Typhoid is given as comorbidity, I don't understand as it is an antecedent of an acute disease not a current chronic comorbidity such as diabetes.

For the effectiveness we need to have the delay between vaccination and COVID 19

infection as the efficacy is going down with time.

Are they registry to collect the vaccine uptake, the number of COVID19 during the period of the study at a national level?

Conclusion

I agree with the authors: “The present study might be helpful in clearing the perceptions and speculations related to COVID-19 vaccination. Further studies with larger cohorts representing all the rural and urban regions of Pakistan are recommended to get a holistic picture of the Pakistan population”.

This kind of study is important despite its low power due to the low number of participants with regard to the different manufactured vaccines. The results are well described in a clear way. Important thing results are related to the Pakistani population and not to other countries where the health system, populations are not the same.