

## ELEMENTS: IN THIS MONTH'S ISSUE

# COVID-19 vaccine hesitancy after side effects to the first vaccine: what are our options?

Seamas C. Donnelly

Editor-in-Chief, QJM

The global vaccination strategy has provided significant protection from both getting coronavirus disease 2019 (COVID-19) infection and if one gets breakthrough infection, protecting you from the more severe form. Side effects while rare are well recognized.<sup>1–4</sup> With regards to vaccination—what of those individuals who have a prior history of severe reactions to vaccines or suffered an allergic reaction to the first dose of the COVID-19 vaccine—what are our options?

The Centre for Disease Control & Prevention (CDC) has reported a rate of anaphylaxis of up to 4.7 cases per million doses.<sup>5</sup> The vaccine antigen itself is rarely responsible for the allergic reaction and most cases are secondary to excipients within the vaccine. The two prime culprits in the COVID-19 RNA vaccines are polyethylene glycol (PEG) and polysorbate 80. Both historically have been implicated in causing anaphylaxis and share cross-reactivity—that is if you had a reaction to polysorbate 80, you are at enhanced risk of a reaction to PEG (reviewed in Ref.<sup>6</sup>). It is natural that such individuals would have a reluctance to obtain further vaccinations or boosters.

An allergic reaction to food, drugs, inhalants or insect venoms is not a contraindication for vaccines. The only contraindications for vaccination with the COVID-19 vaccines are a proven diagnosis of vaccine component hypersensitivity or a previous history of severe allergic reaction to the first dose of the vaccine.<sup>7</sup>

The CDC recommends patient risk stratification via questionnaire into low-, medium- and high-risk groups. Low and medium risk can be given further vaccinations with a 15 and 30 min post-vaccination observation period, respectively.<sup>6</sup> In the high-risk group, additional vaccines maybe considered provided it is performed in an observational environment that can treat appropriately should anaphylaxis occur. They also suggest using a different RNA vaccine than the one originally given. In addition, some national guidelines include a

recommendation on administration of the vaccine in a graded-dose protocol. In the current issue of the journal Dr Jhawar and colleagues from the Mayo Clinic report on the successful use of this strategy in an individual considered high risk for further COVID-19 vaccinations. They employed graded-dose challenge of the Janssen vaccine against COVID-19 in a high-risk patient. We would welcome your opinion on this challenging clinical situation.

## References

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