

Cold Chain, Cold Exposure and Changing of Form of COVID-Vaccine

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Abstract

COVID-19 is the hope for pandemic control. Since it is a new vaccine, there are many concerns on its efficacy and safety. The decreased efficacy of vaccine is possible if there is no good control before use in vaccination procedure. The cold chain is important in vaccine delivery and it is a forgotten determinant for vaccine efficacy in clinical practice. Appropriate temperature control is important. Sometimes, exposure to inappropriate temperature might cause change to vaccine. The change of vaccine after cold exposure is the good example.

Introduction

COVID-19 is the hope for pandemic control. Since it is a new vaccine, there are many concerns on its efficacy and safety. The decreased efficacy of vaccine is possible if there is no good control before use in vaccination procedure. The cold chain is important in vaccine delivery and it is a forgotten determinant for vaccine efficacy in clinical practice [1-2]. Appropriate temperature control is important. Sometimes, exposure to inappropriate temperature might cause change to vaccine. The change of vaccine after cold exposure is the good example.

Cold chain of COVID-19 vaccine delivery

Cold chain is necessary for vaccine delivery for distribution. Many vaccines are recommended for keeping at low temperature and it is usually problematic in tropical country. The control of temperature during transportation might be possible but it is usually impossible for controlling of temperature during real filed usage [3]. This might be a reason for low efficacy of vaccine in many settings. Cold storage capacity is an important consideration in mass immunization management [1]. Effect of interruption of cold chain required a researching [4].

Change of vaccine prior to use

Change of vaccine prior to use might occur if there is no good management. There is an interesting news from Indochina (<https://www.bangkokpost.com/thailand/general/2140491/ice-caused-gel-in-sinovac-vials>) that an inactivated COVID-19 vaccine is changed to gel form. Local CDC noted that it was according to exposure to cold temperature before use. This can confirm

the lability of some vaccines and it might imply the need for good preparation before planning of a mass vaccination.

Conflict of interest: None

References

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