Adenovirus 4 and 7 Vaccine: New Body Armor for U.S. Marine Corps Officer Trainees

Gregory C. Gray

In this issue of The Journal of Infectious Diseases, Bautista-Gogel et al [1] report an outstanding example of an outbreak investigation that led to an effective vaccine intervention. The brief report is a model of cooperation between the US Army and the Centers for Disease Control and Prevention, involving clinical virology, epidemiology, full-genome sequencing, and healthcare policy. The authors are the first to demonstrate that US officer trainees, like US enlisted trainees, will benefit from receipt of adenovirus 4 and 7 vaccine.

The development of adenovirus 4 and 7 vaccine is both a success story and a near tragedy. After a number of false starts [2], the US military effectively and safely used live, enteric-coated adenovirus 4 and 7 vaccine from 1971 to 1999. However, vaccine production tragically ceased in 1996, owing in part to the vaccine’s effectiveness in controlling adenovirus disease and the resultant opinion that the vaccine was no longer needed [3]. During 1999–2011, when the vaccine was not available, US enlisted military trainees experienced thousands of preventable adenovirus-associated hospitalizations [4] and at least 8 deaths [5]. After 10 years of development work, in 2011 a new manufacturer, Barr Laboratories, began selling their version of the adenovirus 4 and 7 vaccine (using the same virus seed lots as in the original). Since then, the revived vaccine’s safety, effectiveness, and economic value have been remarkably good [4, 6–8].

As human adenovirus outbreaks continue to be reported worldwide, investigators are considering whether they might use the current Barr Laboratories type 4 and 7 adenovirus vaccine to protect new populations [9] or whether they should develop new vaccines to counter new adenovirus threats [10, 11]. China in particular has been exploring developing multivalent vaccines for use in both civilian and military populations against adenovirus types 3, 7, 14, and 55 [11–13]. Bautista-Gogel et al’s [1] report is a reminder that the existing adenovirus 4 and 7 vaccine or other adenovirus vaccine constructs may play important future roles in controlling adenovirus morbidity among new population groups.

Notes

Financial support. This work was supported by the SingHealth Duke-National University of Singapore (grant NUS/RCG/2015/0007).

Potential conflicts of interest. Author certifies no potential conflicts of interest. The author has submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

References


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