Analyzing the Development of Vaccines for Flavivirus-Endemic Scenarios: The Case of Dengue and Dengue Vaccine in Peru

To the Editor—We read with great interest the phase 1 clinical trial published by Durbin and colleagues in the *Journal of Infectious Diseases* [1] in which a new tetravalent vaccine (TV003) proved to be safe with a balanced immunogenic response for the 4 serotypes of Dengue virus (DENV) in a North American adult population seronegative for DENV, yellow fever (YF), and other flaviviruses, including West Nile virus. These positive results and the promising single-dose regimen are exciting. We look forward to seeing the results of future studies with this candidate vaccine and its potential benefits to endemic areas like Peru [2,3].

DENV and YF currently both circulate in our country as in many other Latin American countries [4,5]. Previous evidence suggests that preexisting immunity against YF influences the immune response to DENV [6]. The YF vaccine is a part of the routine vaccination schedule in endemic countries [5]. Future trials should include subjects who live in areas where both infections are present. Additionally, children are the most affected population [7] in hyperendemic DENV and YF countries. Therefore, it is important to include them in future studies of this promising new vaccine [1].

Lanata and colleagues [8] conducted a recent study in northern Peru, an area highly affected by dengue, and reported a safety profile and immunogenicity for a live-attenuated, tetravalent dengue vaccine (CYD-TDV) in children aged 2–11 who were previously exposed to the YF vaccine. After the third CD-TDV dose, they found a seropositivity rate of 94.1% against 4 serotypes and 98.4% against 3 or more serotypes of dengue [8]. Although Lanata’s and Durbin’s studies are not comparable in terms of target population and study objectives (since phase 1 trials aim to prove safety among healthy individuals, and phase 2 trials aim to fine-tune the testing protocol), the Lanata et al [8] study is more applicable to dengue endemic countries because of the coexistence of both flaviviruses and the inclusion of children, a high-risk population. We believe that future phases of the Durbin et al trial [1], and other studies regarding new dengue vaccines, should be oriented in this direction. Therefore, for future studies of this new and promising vaccine [1], we recommend gradually including more subjects that better represent the population that will most likely receive these vaccines, as other dengue vaccine studies have done previously [9,10].

Note

Potential conflicts of interest. All authors: No reported conflicts.

All authors have 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.

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