Zika vaccine candidate shows promise in phase I trial

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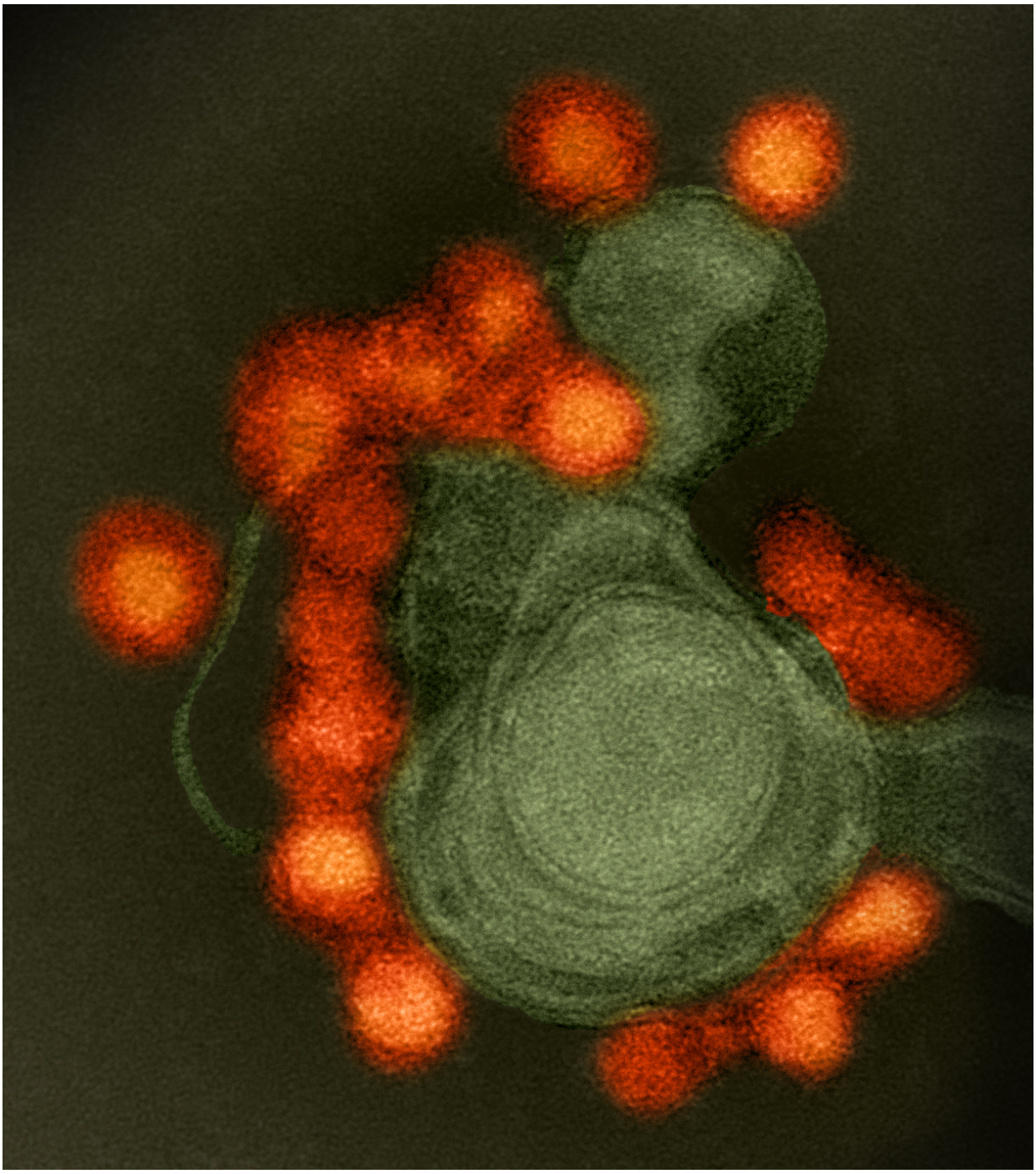

Transmission electron microscope image of negative-stained, Fortaleza-strain Zika virus (red), isolated from a microcephaly case in Brazil. The virus is associated with cellular membranes in the center. Credit: NIAID

The Zika virus candidate, Ad26.ZIKV.001, a replication-incompetent human adenovirus serotype 26 (ad26) vector showed promising safety and immunogenicity in a phase I clinical trial. Researchers say the vaccine warrants further development should the need reemerge. The findings are published in *Annals of Internal Medicine*.

Zika virus (ZIKV) infection is transmitted via mosquito or sexually and may cause severe congenital disease after maternal-fetal transmission. The incidence of Zika virus has declined since the 2015-2016 outbreak, but geographic expansion of the Aedes aegypti mosquito to areas where population-level immunity is low poses a substantial risk for future epidemics. Currently, no vaccine is available.

Researchers from Janssen Vaccines and Prevention and Beth Israel Deaconess Medical Center randomly assigned 100 healthy participants to either a 1- or 2-dose regimen of Ad26.ZIKV.001 or placebo to assess the safety and immunogenicity of the Zika vaccine candidate. They found that 2 doses of Ad26.ZIKV.001 were safe, caused mild to moderate reactogenicity, and induced persistent neutralizing antibody responses.

Transferred antibodies were found to be protective in a mouse Zika challenge model. Antibody responses up to 1 year after vaccination were observed in at least 80% of participants in both 2-dose (high and low) groups, indicating that a low dose would be sufficient. A single-dose vaccine had lower peak neutralizing antibody responses than the 2-dose strategies but nevertheless showed durable antibody titers at 1 year, and thus may be a useful tool in curbing future Zika epidemics.

More information: Abstract: https://www.acpjournals.org/doi/10.7326/M20-5306

Editorial: https://www.acpjournals.org/doi/10.7326/M21-0397

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