

an HCV-negative donor. Could the authors present additional data about the regimen and time course of blood concentration of immunosuppressive agents? Such information would much improve the applicability of this trial among transplant patients.

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No potential conflict of interest relevant to this letter was reported.

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THE AUTHORS REPLY: We agree with Elfeki et al. that uninterrupted access to direct-acting antiviral therapy is an important consideration and must be properly planned before transplantation. The shorter course of therapy in our trial, 4 (rather than 12) weeks, decreases the financial burden of HCV treatment. We are happy to hear that Elfeki et al. are not aware of any insurance denials for this treatment in liver-transplant patients, because the medical benefit is clear and we believe that its use should be supported and expanded for all organ-transplant recipients.

We thank Indolfi et al. for pointing out the potential benefit of our approach in preventing mother-to-child transmission of HCV during the birthing process, because this is an intriguing

application. However, this approach would not affect in utero transmission, and curing HCV-infected women of HCV before pregnancy would obviate this circumstance.

Nitta and Imamura point out an important issue in transplantation: medication interactions, especially with calcineurin inhibitors. Because close monitoring of tacrolimus levels is standard practice in our program, as is the case at transplantation centers in general, all patients had close monitoring of their tacrolimus levels and received appropriate doses to be in the target range in the first month after transplantation and beyond. We did not identify any clear differences in tacrolimus levels being in the target range between the patients receiving organs from donors with hepatitis C viremia and those who received organs from HCV-negative donors. As noted, given the slightly higher rate of acute cellular rejection requiring treatment that was seen in the cohort of patients who received lung transplants from donors with hepatitis C viremia, we are closely monitoring this concern. With 1-year follow-up data now available, the possible signal of increased acute cellular rejection in the recipients of lung transplants from HCV-infected donors has attenuated (57% of patients who received a lung transplant from an HCV-positive donor and 42% of patients who received a lung transplant from an HCV-negative donor).¹

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Since publication of their article, the authors report no further potential conflict of interest.

1. Woolley AE, Singh SK, Goldberg HJ, et al. Donate HCV Trial: transplanting thoracic organs from hepatitis C donors to uninfected patients. *Am J Transplant* 2019;19:Suppl 3:631. abstract.

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A Temporizing Solution to “Artemisinin Resistance”

TO THE EDITOR: We agree with Wang et al. (May 30 issue)¹ that artemisinins are a precious weapon against malaria that must be preserved through intelligent use, but we wish to emphasize the urgency of now dealing with resistance to artemisinin and partner drugs in the Greater Mekong

Subregion. Artemisinin-based combination therapies (ACTs) are the standard treatment for uncomplicated *Plasmodium falciparum* malaria. Three-day ACT regimens are safe and effective and promote better adherence than do longer courses. The use of oral monotherapy with artemisinin, of

any duration, is no longer recommended by the World Health Organization (WHO) and is considered to be a contributing factor to the development of artemisinin resistance.²

A dominant artemisinin-resistant *P. falciparum* Kelch13 C580Y mutant lineage has become established in the Greater Mekong Subregion and has subsequently acquired resistance to partner drugs used in ACTs. This mutant lineage has led to large increases in the rates of treatment failure with dihydroartemisinin–piperaquine, a first-line ACT.^{3,4} In the past, resistance to first-line antimalarial drugs has twice spread from this region to Africa.

International consensus exists regarding the urgent need to eliminate *P. falciparum* from the Greater Mekong Subregion to combat resistance to artemisinin and partner drugs and protect the Indian subcontinent and Africa. This strategic shift has been endorsed by the WHO⁵ with the support of regional governments and the Global Fund through the Regional Artemisinin-Resistance Initiative. To protect the efficacy of antimalarial medicines worldwide, resistance to artemisinin and partner drugs demands urgent action now, not “temporizing.”¹

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THE AUTHORS REPLY: We do not advocate oral monotherapy with artemisinins. Instead, we en-

courage the appropriate use of ACTs and fully support global efforts to eliminate malaria. Recent data show that regionally applied treatment and control measures have been highly effective in the Greater Mekong Subregion.¹

Therapy with dihydroartemisinin–piperaquine fails because of resistance to piperaquine² and also perhaps because dihydroartemisinin is more prone to decomposition than artesunate.³ More recent studies of pyronaridine–artesunate, including a study from Vietnam, confirm that cure rates are higher than 95% and reassure us that effective treatments are available.⁴ Thus, artemisinins remain the only available drug class that can manage and eliminate *P. falciparum* if ACTs are appropriately adjusted, as we elaborated in our Perspective article.

Furthermore, our global community should acknowledge a shared future in which no country is neglected. Urgent actions to control malaria should be focused on areas where the highest disease burdens are present, such as in Africa, where, for example, Nigeria bears 25% of the world's malaria burden.⁵

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Since publication of their article, the authors report no further potential conflict of interest.

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