

## Claims of a cure for HIV come under fire

Claims that a cure for HIV has been discovered have garnered media attention in Nigeria, prompting criticism from government officials and scientists. Talha Burki reports.

In a 2016 paper published in the *British Journal of Medicine and Medical Research*, investigators led by Maduike Ezeibe (Michael Okpara University of Agriculture, Umudike, Nigeria) reported that they had found, in effect, a cure for HIV/AIDS. They wrote that ten patients went from testing positive for HIV to testing negative within months of starting treatment with medicinal synthetic aluminium-magnesium silicates. The previous year, Ezeibe and his colleague Ijeoma Ogbonna had published a similar paper in the *World Journal of AIDS* in which they outlined reductions in viral loads of 75–100% in four patients with HIV using the same treatment.

That Ezeibe has discovered a cure for HIV seems improbable. The studies lacked control groups and randomisation, they were not approved by an independent ethics committee, no information was provided on whether patients were taking antiretroviral therapy, and there was no mention in the conflict of interests statement that Ezeibe owns the patent on the drug under investigation. When asked by *The Lancet Infectious Diseases* about the lack of control group, Ezeibe countered that the before-and-after comparisons served as control. He added that

since his university does not have an independent ethics committee, “each physician/hospital ensured that all ethics were observed”, and that his ownership of the patent was mentioned in the reference section of the *British Journal of Medicine and Medical Research* paper.

**“It shows a profound lack of understanding of the biology of HIV”**

The only mention of consent in the *World Journal of AIDS* paper comes in the methods section, which outlines how the patients who volunteered to try the silicates were instructed to read a pair of scientific papers written by Ezeibe in order to provide consent. Their viral load reductions were self-reported.

The scientific basis for the treatment also appears flawed. “The ultra-small size of aluminum-magnesium silicate nanoparticles allows them access to all organs/tissues of the body, to mop HIV by bonding their negatively charged surfaces to its positive charges”, stated Ezeibe, in a written communication to *The Lancet Infectious Diseases*. “It shows a profound lack of understanding of the biology of HIV”, commented Stefan Baral (Johns Hopkins University, Baltimore, MD, USA), in response to Ezeibe’s explanation.

None of which has deterred Ezeibe, whose qualifications are in veterinary science (he has a doctorate in canine medicine), from publicising his claims in Nigeria. “Every time I give a press conference, no matter what the subject, the first question I am asked is ‘what about this cure?’”, said Sani Aliyu, director-general of Nigeria’s National Agency for the Control of AIDS. A national newspaper has written an editorial in support of Ezeibe, and legislators have spoken in his favour.

Ezeibe says that more than 500 patients are being treated for HIV/AIDS with the silicates. In an interview with *The Lancet Infectious Diseases*, Ezeibe said that HIV-positive patients could be weaned off antiretrovirals, unless they suffer immediate ill-effects. “People do suffer adverse events from the antiretrovirals that are generally available in Nigeria”, points out Baral. “So giving them up can make patients feel better in the short-term.” It takes a few months before viral loads rebound and CD4 counts drop; by this time patients may believe that they are cured.

Nigeria has faced major problems with counterfeit drugs, eroding trust in western medicine. Ezeibe offers a remedy derived from metals that naturally occur in the country. Arguments against the reliability of his findings that invoke terms such as randomisation, phase 2A clinical trials, and the Declaration of Helsinki can struggle to gain traction in a country where literacy rates are 59%. “We have failed to educate the public on what science is about; how drugs are manufactured; how the research process is done; and how drugs are validated and licensed”, Aliyu conceded. “The common man on the street does not understand all that.”

Around the world, there are thousands of herbalists and naturopaths who make extraordinary claims for patented remedies. “The difference with Ezeibe is that he has an academic post” said Aliyu, and that the publication of the studies give Ezeibe “credibility”. Such pseudoscience will “confuse laypeople and politicians”.

Neither journal was available for comment. The *World Journal of AIDS* charges US\$799 for publication. The website lists Linda Moneyham, from the University of Alabama (Tuscaloosa,



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AL, USA), as Editor-in-Chief. She declined repeated requests for an interview. As *The Lancet Infectious Diseases* went to press, the Ezeibe manuscript was freely available from the *World Journal of AIDS* website, where it has been downloaded more than 3000 times. The *World Journal of AIDS* outlines its peer review protocols on its website. "Manuscripts adhering to journal guidelines are reviewed by the Editor-in-Chief or an Editor, who will assign them to reviewers", it states. "The review process is single blind. The editor prepares a decision letter according to the comments of the reviewers, which is sent to the corresponding author". It is not clear which editors or reviewers worked on the Ezeibe paper.

The *British Journal of Medicine and Medical Research* website does not list an editor-in-chief, and charges a publication fee of \$100. Ezeibe's paper underwent open peer review. It was published despite two reviewers

expressing qualms over the lack of approval from an ethics committee. "If these journals had a proper peer review system, no way could either paper have been passed; they were unpublishable", contends Aliyu. "The journals are causing as much harm as Ezeibe himself."

Jimmy Efirid (University of Newcastle, Callaghan, NSW, Australia) resigned from the board of the *British Journal of Medicine and Medical Research* after learning details of the Ezeibe paper. "I can no longer in good faith remain on the editor board of this journal and risk patient safety", he told *The Lancet Infectious Diseases*. "This article highlights the dark side of open access publishing. Many initial supporters of open access publishing, including myself, have become increasingly concerned about the real harms that may occur when junk science slips through the cracks." As of March 26, the Ezeibe paper had been replaced on the *British Journal of Medicine*

and *Medical Research* website by a message saying that the paper is under investigation.

Educating HIV-positive patients everywhere on the nature of their illness, the importance of antiretroviral therapy, and the reasons why researchers are struggling to find a cure for the disease would reduce the likelihood of their falling victim to sham cures. But in an age of easily disseminated misinformation, it will also be necessary for experts to reiterate the value of the established models of drug discovery. "We have to let people know that we have a strong pathway for the creation of new drugs, that follows procedures that have been validated by international normative bodies", said Baral. "The crucial thing is to make it clear that the system does not belong to any one continent or people; it is the world speaking with effective representation from all."

Talha Burki

## Infectious disease surveillance update

### Meningococcal disease in Nigeria

Between December, 2016, and March 19, 2017, 1407 suspected cases of meningococcal meningitis have been reported in Nigeria, including 211 deaths. The cases have been reported from 40 local government administrations in five states: Zamfara, Katsina, and Sokoto states account for 89% of the reported cases. 22 wards in 15 local government administrations have crossed the epidemic threshold. Children aged 5–14 years are the most affected group, accounting for almost half of the reported cases. Both sexes are equally affected. The predominant serotype is serotype C. Rapid response teams coordinated by the Nigeria Centre for Disease Control with support from WHO are engaged in active case finding, and vaccines supplied by GAVI are being administered.

### Rabies in Philippines

A rabies epidemic has been declared in the province of Negros Occidental in Philippines, following the deaths of two men in the town of Cauayan. The first patient was a 63-year-old man who was bitten by his dog last year and later died on March 20, 2017. The second patient was a 65-year-old man who was bitten in the neck by his dog on Jan 15; he did not seek medical treatment and died on March 27, 2017. The family of the second patient slaughtered the dog and ten family members consumed the meat. The family is under observation and some members have had medical treatment. A mass rabies vaccination programme has begun to prevent the disease spreading.

### Yellow fever in Brazil

Since the beginning of 2017, the Brazil Ministry of Health has reported 492 confirmed cases of yellow fever,

including 162 deaths as of March 24. Another 1101 suspected cases are still under investigation. The transmission in four states (Minas Gerais, Espírito Santo, Rio de Janeiro, and São Paulo) has been confirmed to be occurring through the jungle mosquitoes *Haemagogus* and *Sabethes*. Surveillance and case management are being strengthened to contain the virus to prevent infection of the urban *Aedes aegypti* mosquitoes; there is so far no evidence of transmission by *A. aegypti*. 1324 deaths from yellow fever have also been reported in primates, of which 387 have been confirmed through laboratory testing or epidemiological linking. More than 18.8 million doses of the yellow fever vaccine have been distributed in addition to the normal routine immunisation programme.

Ruth Zwizwai

For more on **meningitis in Nigeria** see <http://www.who.int/csr/don/24-march-2017-meningococcal-disease-nigeria/en>

For more on **rabies in Philippines** see <http://www.promedmail.org/post/4936172>

For more on **yellow fever in Brazil** see <http://outbreaknewstoday.com/brazil-yellow-fever-update-nearly-500-confirmed-cases-74967>