Biomedical Research Involving Chimpanzees

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Letter to the Editor

To the Editor:

Biomedical Research Involving Chimpanzees

Readers of ATLA will be aware that, while many countries and the EU have banned or severely limited biomedical research using captive chimpanzees, it continues in the USA. This is a highly controversial issue, which is becoming increasingly newsworthy and is stirring great passions and intense debate. ATLA has been pivotal in aiding this debate, by publishing critiques of chimpanzee use in a variety of areas, such as HIV/AIDS and hepatitis C, and I have recently submitted a review of the genetic differences between humans and chimpanzees for potential future publication.

Legislative interest is significant. The US Great Ape Protection Act of 2009, reintroduced in 2011 as the Great Ape Protection and Cost Savings Act (GAPCSA; H.R.1513/S.810) aims to end invasive biomedical research and testing on an estimated 1,000 chimpanzees in US laboratories, and retire federally owned or supported chimpanzees — many having been in laboratories for more than 40 years — to permanent sanctuary. It is gathering notable bi-partisan support in both the House and Senate, as well as significant public support, with almost three-quarters of Americans agreeing that almost three-quarters of chimpanzees which have been in laboratories for more than 40 years or more should be retired.

Recently, the US National Institutes of Health (NIH) formulated plans to transfer approximately 200 chimpanzees from the Alamogordo Primate Facility in New Mexico — where the chimpanzees have been ‘warehoused’ for the past decade and where invasive research is not permitted — to another facility in Texas, where they were to be the subjects of invasive biomedical research into hepatitis B and C, and also used to test monoclonal antibody therapies for cancer and autoimmune diseases. Such was the degree of opposition to these plans that the NIH recently delayed this transfer, pending a legislative and NIH-requested inquiry by the Institute of Medicine (IOM) on the scientific need for chimpanzee research.

In June, Nature reported on the IOM inquiry. Chimpanzee Research on Trial (Nature 474, 268–271, 16 June 2011) provided a reasonably balanced view of chimpanzee research and the arguments for and against it. The same cannot be said of the accompanying editorial (Great Ape Debate; Nature 474, 252, 16 June 2011), which repeated unsubstantiated claims made by advocates of chimpanzee experimentation with regard to its human relevance and continued necessity, taking an unjustifiably biased stance of advocacy. In reality, ever-stronger scientific arguments against chimpanzee use are coming to the fore. Historically, the chimpanzee model’s value is far from indisputable, as claimed. For example, despite intense promise and speculation, and amid myriad claims to the contrary, the chimpanzee was a terrible model for HIV/AIDS (ATLA 36, 381–428), and claims of its necessity for hepatitis C research have recently been rebutted (ATLA 38, 387–418; 471–494).

Of course, the salient argument is whether chimpanzees can contribute meaningfully to research progress now and in the future, in ways that cannot be replaced by cutting-edge alternative approaches. Further, would any such progress be significant enough to warrant the ethical costs to the chimpanzees involved? This is why ethics are an integral part of any deliberation and must be deliberated by the IOM inquiry, in spite of the NIH’s direction for them not to do so. This is one of the few valid points that Nature’s editorial on the ‘Great Ape Debate’ did make.

There is no evidence to suggest the scientific necessity of chimpanzee experimentation, but plenty to support assertions that it is wasteful, unnecessary, misleading, expensive and ethically unsupportable. For example, the inherent and unavoidable stress of laboratory life significantly affects the expression of genes, with notable consequences for the immune system and the liver. This significantly confounds, for example, the study of infectious diseases, the development of antivirals and vaccines, and studies of drug metabolism.

Project R&R: Release and Restitution for Chimpanzees in US Laboratories, a campaign of Boston’s New England Anti-Vivisection Society (NEAVS), has conducted detailed ethical, scientific, and economic investigations, and has published several papers addressing the claims of supporters of chimpanzee research in peer-reviewed journals, which demonstrates why the passage of the GAPCSA is imperative — for humans as well as chimpanzees. For example, the lack of importance of chimpanzee research is demonstrated by the following facts:

— Over 85% of chimpanzee published research is either not cited, or cited only by studies that do not report human medical advances. Of the few chimpanzee papers cited in reports of human medical advances, the chimpanzee research was in no case a contributory factor to the medical progress reported.

— More than 85 HIV/AIDS vaccines have been developed, almost all of which were successfully...
tested in chimpanzees, yet in 200 human trials, none of them provided human protection from infection or improvement of symptoms.

— A poor model for cancer research, chimpanzee use was sparse and eventually abandoned, and they are not essential for the development of monoclonal antibody therapies for cancer treatment.

— Claims of the usefulness of chimpanzees in hepatitis C research are exaggerated. Assertions of the critical role of chimpanzees in future research are unsupportable. Hepatitis C research with non-chimpanzee methods has increased 80-fold over the last 20 years, while research involving chimpanzees has declined by almost 70% — to an historic low. Myriad non-animal methods have been extremely informative, and facilitate thorough investigation of the complete life cycle of the hepatitis C virus and discovery of therapeutic agents/vaccines in a human context.

— Humans and chimpanzees show major differences in every aspect of gene expression, which affects immune system function, tumour formation, HIV infection, cognitive disorders, and Alzheimer’s, Parkinson’s and Huntington’s diseases, and more.

— Research causes chimpanzees severe and lasting emotional trauma, consistent with Post-traumatic Stress Disorder symptoms in humans. It is therefore impossible to assure their psychological well-being, as demanded by the US Animal Welfare Act 1966.

All this evidence was augmented by testimony from industry scientists at the most recent meeting of the IOM Committee, on 11 August 2011. Together — and contrary to recent and vociferous claims by the directors of two of the largest chimpanzee laboratories in the USA — they asserted that chimpanzees were not necessary for the development of monoclonal antibodies, for research into malaria, for bio-defence, or for antivirals for the treatment of hepatitis C. GlaxoSmithKline (GSK) — one of the world’s leading global pharmaceutical companies — decided as long ago as 1998 that it had no need for the use of chimpanzees in any of their drug development programmes, including drugs for treating hepatitis C. The FDA also announced that it was its policy not to request data from chimpanzee studies, that chimp data in drug applications were rare, that, if asked, the FDA discouraged sponsors from doing those studies, and that, if chimpanzee data were no longer available, then this would have ‘no discernable effect’ on the ability of the FDA to review and/or approve applications in a timely manner.

The diversion of decades of funding from potentially productive research to ineffective research on the poor chimpanzee model may, in fact, have had a negative impact on the advancement of human medicine. The USA stands alone in the world in their use of chimpanzees in invasive research. The purported foreign use of US chimps is misleading, as few non-US researchers are involved (there are an estimated four US-funded studies) and, when they are involved, this is not as Principal Investigators. Today, only 10–20% of US chimpanzees are in active protocols at any time (in an estimated 30 US-funded studies). Multi-national pharmaceutical companies and private laboratories have ended chimpanzee use. If chimpanzee research were vital, as its advocates claim, none of this would be true. For the sake of human health, as well as the welfare of chimpanzees, a truly unbiased IOM inquiry into chimpanzee research will reach the only possible scientific and ethical conclusion: that their use can, and should, end.

Sincerely,

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