

The French Blood Scandal

by Claude Reiss, PhD

As the AIDS epidemics developed in the early eighties, health authorities wanted to avoid it spreading past the gay community and drug consumers, in particular through blood transfusion to haemophilic patients. The observation that great apes, chimpanzees in particular, were immune to the AIDS causative agent, HIV-1, prompted scientific experts to advise the French government that blood, possibly contaminated with HIV, posed no risk. The experts' statement was reported before a select committee of the French Parliament, by the acting director of the Biology department of the Centre National de la Recherche Scientifique, Pierre Tambourin, also president of the National Committee for Animal Experimentation at the Research Ministry. The contamination was highly probable, since part of the blood was collected in prisoners some of which were seropositive, some already developing AIDS. Furthermore, methods were already available to deactivate HIV virulence, in particular by heat. Dedicated heating devices were on the market, a French version was announced but was not yet ready. Based on scientific and perhaps commercial considerations, the French government decided to authorize transfusion of the contaminated blood. As a consequence, some 5,000 haemophilic patients became seropositive, many later developed AIDS. As a much less dramatic by-effect, the French blood scandal also ruined the careers of many promising politicians, in particular the then Prime Minister Laurent Fabius considered by François Mitterrand as his successor as President of the Republic. Fabius attempted a come-back as candidate for the 2007 presidential election in France, but failed, due in large part because the blood scandal sticks to his name.

This is but another example of how catastrophic trusting animal experimentation can be. Indeed, the great apes, chimpanzees in particular, are spontaneously immune to HIV-1, neither do they develop cirrhosis after infection with hepatitis B or C viruses, rheumatoid arthritis, bronchial asthma, type 1 diabetes, multiple sclerosis and many more T-cell mediated diseases that are thought to be linked to over-activation of the immune cells.

It is of interest to understand how great apes manage to calm their immune cells and why we cannot - but there is no need to cage or even kill chimpanzees. A few drops of their blood, compared to a few drops of ours, will do, as this is enough for sequencing the genomes and compare immune cells of both species. This is precisely what was done by Nguyen et al (PNAS 2006, 103, 7765-70), who report that immune cell activation in primates is negatively controlled by 'siglecs' (for sialic acid recognizing Ig lectins). Since these proteins are much less abundant in humans than in apes, the phenotype differences can be understood as a species-specific difference in the control and regulation of siglecs gene expression. This result shows the power of molecular and cellular approaches in biomedical research, it would never have been obtained by whole animal studies. Instead of setting up large primate laboratories to study human diseases, it would be definitely more rewarding to address human tissues and cells directly, in the present case to see how siglec expression could be tamed to some extent, thereby bringing hope and perhaps relief to millions.

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