



Use of Aborted Fetal Tissue in Vaccines and Medical Research Obscures the Value of All Human Life

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Abstract

This opinion addresses the licitness, quasi-benefits, and consequences of using aborted fetal tissue in vaccines and in medical research. The Catholic Church permits temporary use of vaccines generated using aborted fetal tissue to protect children from preventable diseases until alternative vaccines that do not use aborted fetal tissue are available. In medical research, cell lines that were generated from elective abortions should be avoided and alternative cell lines of licit origin utilized. The association between in utero Zika virus infections and microcephaly has increased the demand for fetal tissue to establish causality and to understand disease progression. These studies require extensive oversight as they could directly encourage elective abortions. The consequence of the use of fetal tissue from elective abortions is desensitization of beneficiaries to the original illicit act of abortion thereby obscuring the value of all human life and potentially leading to scandal.

Summary: The use of fetal tissue from elective abortions is commonplace in the pharmaceutical industry and in medical research. This opinion addresses the licitness, quasi-benefits, and consequences of using fetal tissue from elective abortions in vaccines and in medical research. All people of good conscience have the responsibility to voice opposition to the use of fetal tissue from elective abortions in order to promote development of alternatives, affirm the value of all human life and limit scandal.

Keywords

abortion, ethics, fetal tissue, research, vaccine

Despite the recent attention paid to Planned Parenthood's reimbursement practices for providing aborted fetal tissue to research laboratories (Armour 2015), the commercialization of fetal tissue is not a new practice. The utilization of embryonic and fetal cells from elective abortions in the pharmaceutical industry and medical research is commonplace. The Catholic Church's position on abortion is very clear, "from the moment of conception, the life of every human being is to be respected in an absolute way, . . . [therefore], no one can under any circumstance claim the right directly to destroy an innocent human being" (Congregation for the Doctrine of the Faith 1987, intro, no. 5). Abortion

is morally illicit, but what about the use of fetal tissue from an elective abortion, tissue that would otherwise have been discarded and is now providing worth-while therapies, or could be of value in medical research?

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Fetal Tissue from Elective Abortions in Vaccines

The American Academy of Pediatrics recommends fifteen different vaccines for children to induce protection against several viral and bacterial infections that are causes of morbidity and mortality (American Academy of Pediatrics 2016). Three of these vaccines, M-M-R-II (Merck 2016a), VARIVAX (Merck 2016b), and HAVRIX (Glaxo Smith Kline 2016) utilize cell lines WI-38 or MRC-5 that were derived from fetal tissues (Wong 2006) harvested from elective abortions in the 1960s to generate the attenuated viruses used in these immunizations for rubella (M-M-R-II), varicella (VARIVAX), or hepatitis A (HAVRIX). The efficacy of these vaccines has been clearly demonstrated.

In the pre-vaccine era, during the rubella pandemic of 1962–1965, 12.5 million clinical cases of rubella were reported in the United States that resulted in 2,000 cases of encephalitis, 11,250 fetal deaths, 2,100 neonatal deaths, and 20,000 infants born with congenital rubella syndrome, a grouping of birth defects that include blindness, deafness, and heart disease (Plotkin et al. 1965). Since introduction of the rubella vaccine in 1969, the number of rubella cases and newborns with congenital rubella syndrome has become so low (<10 annually) that rubella is no longer considered endemic in the United States (CDC 2005). A single dose of the VARIVAX vaccine is 80–85 percent effective in preventing varicella (chicken pox) (Seward et al. 2008) and the efficacy of HAVRIX in preventing hepatitis A infection in an endemic area (Thailand) was 95 percent (Innis 1994).

The Catholic Church has indicated that “it is right to abstain from using these vaccines [produced using aborted fetal tissue]” (Pontifical Academy for Life 2006, 548). However, this right should only be exercised if children and the population as a whole are not thereby subjected to significant health risks. The harm due to infections that are preventable by these vaccines presents a “grave inconvenience” that imposes their use (Pontifical Academy for Life 2006, 548). For example, the recent outbreak of measles at Disneyland in California highlighted that measles virus continues to circulate (CDC 2016), and there is an association between vaccine refusal and clinical cases of measles in the United States (Phadke et al. 2016). Therefore, protection against measles, mumps, and rubella provided by the combination M-M-R-II vaccine normally prevents measles virus infection. As measles carries the risk of encephalitis that can be fatal or cause brain damage, this

presents a “grave inconvenience” (Pontifical Academy for Life 2006), which imposes vaccination of children with the M-M-R-II vaccine because an alternative vaccine that does not use aborted fetal cell lines is not available in the United States.

The consequences of rubella infection in pregnant women also present a “grave inconvenience” (Pontifical Academy for Life 2006) that imposes vaccination with the M-M-R-II vaccine. Although rubella causes only a self-limiting skin rash in pregnant mothers, vertical transmission of rubella virus to the fetus causes severe fetal defects that can be fatal. *In utero* rubella infection is preventable by vaccination.

Determination of a “grave inconvenience” (Pontifical Academy for Life 2006, 548) to impose the use of VARIVAX or HAVRIX vaccines is dependent on assessment of risk factors for each individual and that individual’s involvement with at-risk persons. The majority of children infected with varicella experience only a self-limiting rash (chicken pox), and natural immunity to varicella develops with each subsequent varicella exposure, evidence that was used to support the decision to not include varicella vaccination in the United Kingdom’s childhood vaccination program (Hobbelen et al. 2016). However, immune suppressed individuals are at greater risk of serious complications from varicella infection including secondary skin infections, encephalitis, and pneumonia; and vaccination is recommended (Gershon and Gershon 2010). Nine percent of pregnant women infected with varicella will develop pneumonia, and placental transmission of varicella to the fetus causes congenital varicella syndrome characterized by neurological defects, ocular disease, and skeletal abnormalities in 2 percent of *in utero* infections (Bonanni et al. 2009). In addition, sterile elimination of varicella virus does not occur in infected children and viral latency is established. As immunity wanes with age, virus reactivation from latency occurs in 30 percent of adults (Gershon and Gershon 2010), causing Herpes zoster (shingles) with complications that can include chronic pain, known as post-herpetic neuralgia. An adult vaccine, ZOSTAVAX (Merck 2016c) is efficacious in preventing shingles, but also uses fetal cells from elective abortions to produce attenuated viruses.

The HAVRIX vaccine provides protection against hepatitis A infections (Innis 1994). However, hepatitis A is not endemic in the United States. Hepatitis A is also spread by the fecal-oral route; therefore, improvements in hygiene and sanitation significantly reduce infection (CDC 2006). Nevertheless, some individuals are at risk for hepatitis A

infections, which can cause severe liver disease, presenting a grave inconvenience imposing vaccination. These include those traveling to areas where hepatitis A virus is endemic, men who have sex with men, intravenous drug users, those with clotting disorders, those working with nonhuman primates, and those having sexual intercourse with someone who has hepatitis A (CDC 2006).

It is important to note that the use of these vaccines, generated from fetal tissue of elective abortions, can only occur on a temporary basis, as it represents a “very remote mediate material cooperation” (Pontifical Academy for Life 2006, 547) with the original illicit act of abortion. The distinctions between the different forms of cooperation were established by St. Alphonsus Liguori and can be categorized by the proximity of actions to the original illicit act. An example using vaccines generated from fetal tissue of an elective abortion follows:

Principal agent: The mother who elects to terminate her pregnancy.

Formal cooperator: The abortionist who agrees with the actions of the principal agent and supports her by performing the abortion.

Immediate material cooperator: A nurse who does not agree with the actions of the principal agent but supports the abortionist in performance of the abortion.

Mediate material cooperators: The nurse who does not agree with the actions of the principal agent but prepares her for the abortion and monitors her recovery post-abortion.

Remote mediate material cooperators: The technicians at the abortion clinic that process and package fetal tissue for future use in scientific research. The scientists who arrange to receive aborted fetal tissue from the clinic for their research.

Very remote mediate material cooperators: Individuals utilizing a product, for example a vaccine that was generated utilizing aborted fetal tissue.

Even the distant cooperation represented by these vaccines needs to be avoided as it is:

moral coercion of the conscience of the parents, who are forced to choose to act against their conscience or otherwise, to put the health of their children and the population as a whole at risk. . . . [Therefore,] doctors and fathers of families have a duty to take recourse to alternative vaccines (if they exist), putting pressure on the

political authorities and health systems so that other vaccines without moral problems become available. (Pontifical Academy for Life 2006, 549, 547–8)

Fetal Tissue from Elective Abortions in Medical Research

The human embryonic kidney (HEK) 293 cell line, derived from an elective abortion in the 1970s, is routinely used for production of proteins and cultivation of viruses due to the ease of transfection with gene constructs that are efficiently translated into appropriately folded proteins (Wong 2006). A PubMed search with the term “HEK,” lists more than thirty thousand citations, testifying to the extensive use of this cell line.¹ The Catholic Church’s position on the use of HEK293 cells, or other cell lines generated from elective abortions, in medical research is that they should be avoided because other-wise this creates a “contradiction in the attitude of the [researcher] who says that he does not approve of the injustice perpetrated by others, but at the same time accepts for his own work the ‘biological material’ which the others have obtained by means of that injustice” (Congregation for the Doctrine of the Faith 2008, no. 35).

Again, alternatives should be explored. Utilization of fetal tissue from spontaneous abortion (miscarriage) is licit. In addition, COS-1 cells that are not derived from elective abortions are effective for production of proteins that could be utilized in some studies (Smith 2009). Unfortunately, COS-1 cells are of monkey origin. Hence, xenogeneic differences between monkey and human proteins limit their use in the generation of vaccines.

Fetal Tissue from Elective Abortions in Zika Virus Research

Recently, two articles were published in the *New England Journal of Medicine* that characterized fetuses of elective abortions, one being thirty-two weeks old, from mothers who contracted Zika virus in the first trimester of pregnancy (Mlakar et al. 2016; Driggers et al. 2016). These studies identified Zika virus in the microcephalic brains of the fetuses indicating an association between *in utero* Zika virus infection and microcephaly. More research on human subjects with similar experimental designs has been proposed to better understand fetal infection (Check Hayden 2016).

These studies would also involve pregnant women who have been exposed to Zika virus infection that are followed for microcephaly by ultrasound throughout pregnancy. They would be informed of ultrasound results and, if microcephaly was demonstrated, would receive counsel on the prognosis of their child and options available, including termination of the pregnancy. If the mother elects to abort her child and provides her consent, the aborted fetal tissue would then be utilized in research procedures.

This experimental design denies the intrinsic right to life of unborn human beings as the success of the study is predicated on the decisions of mothers to abort their babies. The U.S. Department of Health and Human Services Code of Federal Regulations (CFR) Title 45 Part 46 Subpart B, "Additional Protections for Pregnant Women, Human Fetuses, and Neonates Involved in Research," indicates that:

The risk to the fetus is caused solely by interventions or procedures that hold out the prospect of direct benefit for the woman or the fetus; or, if there is no such prospect of benefit, the risk to the fetus is not greater than minimal and the purpose of the research is the development of important biomedical knowledge which cannot be obtained by any other means. (U.S. Department of Health and Human Services 2009)

While the ultrasound procedure presents minimal risk to the fetus, diagnosis of microcephaly by ultrasound has the potential to place the fetus at greatest risk due to the mother's decision to abort the fetus.

To minimize the possibility that involvement in research will influence a mother's decision to terminate a pregnancy, 45 CFR 46, Subpart B, indicates that, "no inducements, monetary or otherwise, will be offered to terminate a pregnancy" (U.S. Department of Health and Human Services 2009). In addition, it "excludes researchers from any decisions as to the timing, methods, or procedures used to terminate a pregnancy, or determinations on the viability of the fetus at the termination of the pregnancy" (U.S. Department of Health and Human Services 2009). Nevertheless, it is very challenging to design experimentation that identifies microcephaly *in utero*, which would not increase the number of elective abortions regardless of whether research scientists desiring aborted fetal tissue were excluded from involvement with patients' decision making. Here, the Catholic Church's perspective is invaluable: "sick and disabled people are not some separate

category of humanity; in fact, sickness and disability are part of the human condition and affect every individual, even when there is no direct experience of it" (Congregation for the Doctrine of the Faith 2008, no. 22). Therefore, only an experimental design that recognized the dignity and legal status of both healthy and diseased fetuses would effectively discourage elective abortion in research studies. This design would not only protect the unborn but also limit scandal (Catechism of the Catholic Church, no. 2284), a behavior that leads another to do evil, from the actions of mothers and scientists.

Development of a vaccine against Zika virus is a top priority; and as the virus infects fetal brain tissue, it is likely that cultivation of Zika virus for use in vaccines could occur in fetal tissue derived from elective abortions. However, alternative tissue that is not derived from elective abortions could be equally effective and should be investigated.

Conclusions

Each medical benefit or scientific advance from the use of fetal tissue from elective abortions desensitizes beneficiaries, scientists, and doctors to the original evil act that produced these cells. Aborted fetal tissues used in laboratories are minimized to merely human cells, and the human beings whose lives were taken to provide those cells become irrelevant and with time forgotten. Of greatest concern is that desensitization ultimately leads to scandal by erroneously validating elective abortions for a greater good. Without careful oversight, the fetus could become, like fetal tissue cell lines, merely cells, cultured within the uterus for scientific exploration. All people of good conscience have the responsibility to voice opposition to the use of fetal tissue from elective abortions in order to promote development of alternatives, affirm the value of all human life, and limit scandal.

Note

1. A search of NCBI databases for "HEK293," <http://www.ncbi.nlm.nih.gov/gquery/?term=HEK293>.

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