
Transplantation of electively aborted human fetal tissue: physicians' attitudes

Michelle A. Mullen,* MHP; J. Ivan Williams,† PhD; Frederick H. Lowy,* MD

Objective: To provide empirical data on the attitudes of Ontario family physicians and gynecologists toward the use of electively aborted fetal tissue for transplantation (FTT).

Design: Cross-sectional survey.

Setting: Ontario.

Participants: Random samples of 300 physicians from the membership list of the College of Family Physicians of Canada and 300 from the membership list of the Society of Obstetricians and Gynaecologists of Canada; 248 family physicians and 186 gynecologists responded, for an overall response rate of 72%.

Outcome measures: Physicians' attitudes toward incentives to collect fetal tissue at abortion, patient-management issues, consent issues and potential conflicts in the supply and demand of fetal tissue.

Results: Of those surveyed 75% agreed that there should be no incentives to collect fetal tissue at abortion, 90% believed that decisions to abort must be separate from decisions to donate fetal tissue, 94% agreed that an option to donate fetal tissue should be discussed only after a firm decision to abort has been made, and 88% stated that the demand for fetal tissue should not hinder the availability of new abortion technology such as the abortifacient pill (RU 486).

Conclusions: Results suggest that there is general approval for FTT. Apparent variations between responses to global statements and to practice-oriented statements suggest strategies for effective Canadian public policy regarding FTT.

Objectif : Fournir des données empiriques sur les attitudes des médecins de famille et des gynécologues de l'Ontario au sujet de la greffe de tissus de foetus dont la gestation a été interrompue volontairement.

Conception : Enquête ponctuelle.

Contexte : Ontario.

Participants : Échantillons choisis au hasard de 300 médecins tirés de la liste des membres du Collège des médecins de famille du Canada et de 300 autres provenant de la liste des membres de la Société des obstétriciens et gynécologues du Canada; 248 médecins de familles et 186 gynécologues ont répondu, ce qui donne un taux de réponse total de 72 %.

Mesures de résultats : Attitudes des médecins à l'égard des incitations à prélever des tissus de foetus au moment de l'interruption de la grossesse, questions liées au traitement des patients et au consentement, conflits possibles entre l'offre et la demande de tissus de foetus.

Résultats : Parmi les sondés, 75 % ont convenu qu'il ne devrait pas y avoir d'incitation au prélèvement de tissus de foetus à l'interruption de la grossesse, 90 % étaient d'avis qu'une décision d'interrompre une grossesse doit être distincte de celle qui porte sur le don de tissus de foetus, 94 % ont convenu que la possibilité de faire don de tissus de foetus ne devrait être abordée qu'une fois prise la décision ferme d'interrompre la grossesse et 88 % ont déclaré

From *the Centre for Bioethics, Institute of Medical Science, and †the Institute for Clinical Evaluative Sciences, Sunnybrook Health Science Centre, University of Toronto, Toronto, Ont.

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Reprint requests to: Michelle A. Mullen, Centre for Bioethics, University of Toronto, 88 College St., Toronto, ON M5G 1L4

que la demande de tissus de fœtus ne devrait pas nuire à la disponibilité de nouvelles techniques d'interruption de grossesse comme la pilule abortive (RU 486).

Conclusions : Les résultats indiquent que la greffe de tissus de fœtus dont la gestation a été interrompue volontairement est en général approuvée. Les écarts apparents entre les réponses aux énoncés généraux et aux énoncés liés à la pratique laissent entrevoir des stratégies d'élaboration de politiques publiques canadiennes efficaces au sujet de la greffe de tissus de fœtus dont la gestation a été interrompue volontairement.

The use of aborted fetal tissue for transplantation (FTT) has raised exciting clinical possibilities and difficult social and ethical issues. Perhaps most controversial is whether the use of such tissue can be evaluated separately from abortion, or whether it is complicit with the act of abortion. Antiabortionists reject the use of electively aborted fetal tissue, claiming that donation for FTT will make abortion more attractive to pregnant women and that some physicians will offer tissue donation as a positive incentive to abortion. Others have sought to insulate FTT from the abortion debate, reasoning that the act of abortion and tissue harvest for FTT can be separated procedurally and suggesting that policy is needed to prohibit commercialization and manipulation of the method or timing of abortion and to permit requests for donations only after a firm decision to terminate pregnancy has been made.¹ Finally, there is the concern that FTT will lead to increased societal acceptance of abortion: one step along the "slippery slope" to such practices as infanticide.²

Fetal tissue offers unique advantages over tissue collected postnatally: a remarkable potential for growth and differentiation,³ functional growth when transplanted into adult hosts,⁴ resistance to oxygen deprivation⁵ and decreased immunogenic effects.⁶ Electively aborted fetuses are the technically preferred source, since tissue from spontaneously aborted fetuses and ectopic pregnancies are frequently infected, necrotic and known to have high rates of genetic anomalies.^{7,8} FTT may offer hope in the treatment of a variety of diseases: Parkinson's disease,⁹ juvenile (insulin-dependent) diabetes¹⁰ and certain types of leukemia.¹¹ Currently, investigations are under way into the use of FTT in the treatment of some 20 fatal or seriously debilitating conditions.¹²

Until recently, federal funding for FTT has been banned in the United States. In Britain the British Medical Association's interim guidelines exist,¹³ but there is no formal government policy. The guidelines of the Medical Research Council of Canada (MRC) refer to the matter only fleetingly and govern only research funded by the MRC.¹⁴ As part of its broader mandate the Royal Commission on New Reproductive Technologies has recently made recommendations on the use of aborted fetal tissue for research and therapy, although as yet there is no formal public policy to govern FTT in Canada.¹⁵ To date, the only Canadian clinical trial of FTT is under way in Halifax;¹⁶ it involves a small number of patients with Parkinson's disease. Thus, the evolution of FTT practice in Canada is only beginning.

The ethical issue framing this research is whether FTT can be separated from the act of abortion. This question encompasses both philosophic and empirical, practice-oriented issues. What are physicians' attitudes toward incentives to collect fetal tissue? What are possible effects on patient management? What are the consent issues at stake? How do physicians see issues of potential supply and demand? To date, the debate over therapies using aborted fetal tissue has been limited by a lack of empirical data supporting or refuting the claims levied against FTT that might clarify practical issues in the procedural separation of FTT from abortion. Given the continual and seemingly unresolvable debate over abortion, as well as the potential therapeutic benefits of FTT, sound policy to separate FTT from abortion is needed and, in our view, should take into account empirical evidence. To help address this, our study was undertaken to examine the attitudes of family physicians and gynecologists who counsel women considering abortion or who perform abortions.

Methods

Questionnaire

The questionnaire was developed in three steps. First, the clinical, philosophic and legal literature addressing abortion and FTT was reviewed. Second, the issues and research questions were discussed with separate focus groups of eight practitioners in favour of and seven opposed to abortion. The focus groups were asked to comment and elaborate on the comprehensiveness and relevance of the issues and practices that might arise if FTT were approved. Third, a questionnaire was drafted and submitted to the focus group participants and four other physicians for comment on the face validity and comprehensibility of the questions, the required response time and the response options for the questions. The instrument was then redrafted and the final version mailed to a random sample of family physicians and gynecologists across Ontario.

The final questionnaire contained 36 statements covering the domains of incentives for fetal-tissue collection, patient management, issues on obtaining consent for fetal-tissue donation, and supply and demand. Statements included global issues of principle as well as practice-oriented questions. Responses were requested on a 5-point Likert-type scale, ranging from strongly agree to strongly disagree, to permit the construction of a sum-

mated scale for cross tabulation in order to examine possible patterns in responses related to demographic variables. The research protocol and survey instrument were reviewed and approved by the University of Toronto Review Committee on the Use of Human Subjects. (A copy of the questionnaire is available from the authors upon request.)

Subjects

The study population included family physicians and gynecologists practising in Ontario. The College of Family Physicians of Canada and the Society of Obstetricians and Gynaecologists of Canada each provided a list of 300 randomly selected physicians from their Ontario membership lists. The college's list had equal numbers of men and women; the society's list did not, because less than half of the members are women.

Data collection and analysis

Data were collected according to a modified Dillman technique:¹⁷ the mailed questionnaire was accompanied by a preaddressed, prestamped return envelope. Subjects were asked to return a postcard verifying receipt of the questionnaire and not to record their name or address on the questionnaire in order to maintain confidentiality. A second mailing was sent to physicians who had not returned the postcard within 4 weeks after the first mailing. There were no further attempts to contact physicians after the second mailing. Of the 600 physicians contacted, 434 (72%) returned the questionnaire.

Data were entered into a spreadsheet program (Quattro Pro, version 3, Borland International Inc., Scott Valley, Calif.). The data were analysed with the use of SPSS/PC+ (SPSS Inc., Chicago) and SYSTAT (version 5, SYSTAT Inc., Evanston, Ill.) statistical packages. Descriptive statistics for the characteristics of the subjects and their responses to the statements were derived. Cross

tabulations and analysis of variance were used to determine whether there were systematic variations in responses related to specialty type, provision of abortion counselling or abortion, sex, practice location and other demographic variables.

Results

Physicians' characteristics

Table 1 summarizes the demographic characteristics of the sample. The response rates were 83% for the family physicians and 62% for the gynecologists. Female physicians were somewhat underrepresented in the gynecologist sample. Overall, 29% of the respondents reported that they neither perform abortions nor counsel women about abortion decisions. The response patterns did not differ significantly between the two groups in relation to specialty type, sex, age, religiosity or type of religion, provision of abortion services, practice locale, community size or inclusion of Parkinson's patients in the practice.

Physicians' attitudes

The physicians' responses to the global and practice-oriented statements about FTT are summarized in Table 2. For clarity of interpretation, the five response categories were collapsed into Agree, Disagree and Unsure for tabular presentation.

Most of the subjects agreed that the use of electively aborted fetal tissue for transplantation is morally justified (84%), that there should be no incentives for physicians to collect fetal tissue at abortion (75%), that decisions to donate tissue for FTT and to undergo abortion must be separate (90%), that donation of fetal tissue should be discussed only after a firm decision to proceed with an abortion has been made (94%) and that the demand for fetal tissue for FTT must not hinder the avail-

Table 1: Demographic profile of family physicians and gynecologists in Ontario who responded to a questionnaire on the use of electively aborted fetal tissue for transplantation (FTT)

Characteristic	Group; no. (and %) of respondents	
	Family physicians (n = 248)	Gynecologists (n = 186)
Sex		
Female	122 (49)	30 (16)
Male	126 (51)	156 (84)
Practice		
Provides abortions	13 (5)	91 (49)
Provides abortion counselling	174 (70)	30 (16)
Neither	61 (25)	65 (35)
Has patients with Parkinson's disease	169 (68)	9 (5)

ability of new abortion technology such as the abortifacient pill (RU 486) (88%).

Discussion

The literature is rich in debate and speculation over whether FTT is morally justified but is characterized by unsubstantiated claims and counter-claims about how women and their physicians would behave if FTT programs were permitted. A recent US opinion poll indicated that a majority of the public favour FTT research.¹⁸ To our knowledge our study provides the first set of empirical data on physicians' attitudes toward FTT. These may be used to either support or refute some of the claims concerning FTT and to inform policy intended to separate FTT and abortion procedurally.

In our study most of the respondents agreed with the global statement that there should be no incentives for physicians to collect fetal tissue at abortion and the specific statement that there should be no monetary incen-

tives. However, there was much less agreement about the importance of other incentives such as coauthorship on transplant publications and research funding to develop abortion techniques that would improve tissue harvest. These findings are important, since it is generally accepted that academic benefits such as coauthorship and research funding may be powerful incentives, particularly in tertiary care centres, where FTT is likely to be practised.

On patient management issues, 90% of the respondents agreed that decisions to donate fetal tissue and those to undergo abortion must be separate, which suggests a clear separation of FTT and abortion. However, only 60% agreed that abortion should not be provided for a patient with a designated recipient of the fetal tissue, and 10% agreed that the issue of tissue donation may be raised with a patient undecided about terminating her pregnancy. These two findings suggest that the practical separation of FTT and abortion is less clear, with implications for policy strategies to set clear guidelines separating FTT from abortion.

Table 2: Summary of the physicians' attitudes toward FTT*

Statement	Response; † % of physicians		
	Agree	Disagree	Unsure
Use of FTT is morally justified	84	11	5
Incentives			
<i>There should be no incentives for physicians to harvest fetal tissue</i>	75	16	9
There should be no monetary incentives for collecting fetal tissue	64	17	9
Physicians who harvest fetal tissue should not gain coauthorship on transplantation publications	51	33	16
Physicians should not receive research funds to improve tissue collection	29	11	60
Patient management			
<i>Decision to abort must be separate from decision to donate fetal tissue</i>	90	6	4
Physicians may alter timing or method of abortion to optimize harvest	20	70	10
Physicians should not abort a fetus of a patient who has designated a recipient for the fetal tissue	60	24	16
Physicians may offer tissue donation as an option to patients undecided about abortion	10	87	3
Physicians may give priority scheduling of abortions to patients agreeing to donate fetal tissue	11	79	10
It is acceptable to plan a pregnancy for the purpose of donating fetal tissue for FTT	5	91	4
Consent			
<i>Donation should be discussed only after a firm decision to abort has been made</i>	94	3	3
Donor patients must specifically agree to HIV-antibody testing and other transplantation screening	82	7	11
Global consent is sufficient to harvest fetal tissue for FTT without the patient's specific consent	38	56	6
Women who undergo abortion have ceded their right concerning the disposal or use of the fetal tissue	35	58	7
Supply and demand			
<i>FTT must not hinder the availability of new abortion technology</i>	88	5	7
A woman's safety must be foremost if methods to harvest fetal tissue are altered	75	14	11
New abortion technology will limit future supply of fetal tissue	50	8	42
Altering abortion methods renders a woman an experimental subject	43	39	18

*Statements in italics reflect global issues. Other statements are practice oriented.

†Agree includes responses in the categories "Agree strongly" and "Agree somewhat"; Disagree includes responses in the categories "Disagree strongly" and "Disagree somewhat."

Similarly, although 94% of the physicians agreed that fetal tissue donation should be discussed only after a firm decision to abort has been made, 38% seemed satisfied that global consent for the abortion procedure would suffice for the collection of fetal tissue for transplantation. Furthermore, 35% agreed that a woman who has an abortion cedes her right to decide about the use of the aborted fetus. Given the plurality of values and beliefs around the status of the fetus and abortion, some women may find tissue donation at abortion a positive and healing experience, whereas others may find the practice repugnant. In accordance with general practices surrounding the use of human tissue and organs for transplantation, separate and specific consent is ethically required in order to collect electively aborted fetal tissue for transplantation.

Responses to the statements concerning supply and demand raise important concerns: manipulation of the method or timing of abortion directly links FTT to the act of abortion and needs to be addressed. We noted that 14% of the respondents disagreed and 11% were unsure that preserving the margin of safety for the woman must be the primary concern if abortion procedures were modified to improve the harvest of fetal tissue for transplantation. Almost half (43%) agreed that such modifications would render their patient an experimental subject. These results raise important questions about how the respondents weighed the primacy of duty owed a patient by her physician. Traditionally, the onus of responsibility of physicians is to patients under their immediate care, and not to third parties. In our study some of the physicians may have felt that the added risks associated with manipulation of the timing or method of abortion would be minor compared with the potential benefits that might accrue to seriously ill recipients of fetal tissue. Such responses may also reflect diminished respect for women undergoing abortion. To promote separation of FTT and abortion and to protect the interests of this vulnerable patient population the method and timing of abortion should be chosen solely on the basis of the patients' health care needs.

Although there was much agreement among the respondents to the global statements supporting the separation of abortion and FTT, we believe that there may be important differences in the translation of such principles into practice. Because of the limitation of this study, other interpretations are possible. In addition to the limitations of attitude surveys in general, our results should be viewed with caution, since (a) this is the first assessment of physicians' attitudes in this area, and it is not possible to know whether views expressed are firm or fixed; (b) general knowledge and discussion of FTT are still limited, especially in Ontario, where it is not yet a part of clinical practice; (c) these views are theoretical and anticipatory rather than grounded in physicians' actual practice and experience with FTT; (d) 29% of the respondents reported that they neither provide abortion

counselling nor perform abortions; (e) the gynecologists' responses may be less generalizable than those of the family physicians, given the different response rates (62% v. 83%); and (f) this debate and policy analysis need input from other key stakeholders and feedback through public discussion. Studies on the attitudes of women and health care providers other than physicians are in progress at the Centre for Bioethics, University of Toronto.

The Royal Commission on New Reproductive Technologies, in its final report to government,¹⁵ recommended (in recommendation R. 281) that (a) any use of fetal tissue other than routine examination requires informed consent by the woman undergoing abortion, (b) this consent be sought separately and subsequent to her decision to terminate pregnancy, (c) consent clarifies that her decision will not affect her medical care, (d) any screening, including serologic testing for HIV-antibody status, requires separate consent. It also recommended that the method and timing of abortion be chosen solely to protect the health and interests of the woman involved (R. 283), that designation of a recipient by the woman be prohibited (R. 284) and that physicians supplying fetal tissue not receive coauthorship credit for this role in publications resulting from the use of fetal tissue in research or any direct or indirect financial benefit (R. 285).

These recommendations speak directly to our research questions around incentives, patient management, consent, and supply and demand. It remains to be seen if and how Parliament will implement any of the commission's final recommendations. Regardless, the commission does recommend that its guidelines on the use of human fetal tissue be incorporated into provincial human tissue gift acts.

Debate over the moral acceptability of FTT is characterized by polarization on the abortion issue. Our study provides the first empirical examination of some of the issues, although investigations of the attitudes and concerns of women, health care providers other than physicians and the public are required. Used selectively, these data might justify both positions for and against continuing FTT research. However, these data should be used to elevate the debate in the following ways: to recognize that there is widespread approval of FTT among relevant medical practitioners, that there is considerable consensus among these practitioners on general principles to separate FTT from abortion and that among physicians there may be important variations in the translation of these principles into practice. Our results suggest that any Canadian policy to separate FTT from abortion may need to address specific practice as much as principle if it is to be effective.

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October 1994: 2nd International Forum of Medical Cooperative Health Care
Brasilia, Brazil

Unimed do Brasil, Confederação Nacional das Cooperativas Médicas, Alameda Santos, 1827-15° andar, CEP 01419-002, São Paulo, Brazil; tel 011-55-11-253-6633, fax 011-55-11-253-6656

Oct. 1-4, 1994: 2nd International Cochrane Colloquium and Cochrane Collaboration Official Annual Meeting
Hamilton, Ont.

Judi Morrison, Canadian Cochrane Centre, Health Information Research Unit, McMaster University Health Sciences Centre, Rm. 3H7, 1200 Main St. W, Hamilton, ON L8N 3Z5

Oct. 2-7, 1994: World Congresses of Gastroenterology (includes 10th Congress of Gastroenterology, 8th Congress of Digestive Endoscopy, 5th Congress of Coloproctology; organized by the American Association for the Study of Liver Diseases, the American College of Gastroenterology, the American Gastroenterological Association, the American Society for Gastrointestinal Endoscopy, the American Society of Colon and Rectal Surgeons and the Society for Surgery of the Alimentary Tract)

Los Angeles

Congress Secretariat, 300-655 15th St. NW, Washington, DC 20005; tel (202) 639-4626, fax (202) 347-6109

Oct. 6-7, 1994: 4th Canadian Coordinating Office for Health Technology Assessment Regional Symposium: Reuse of Disposable Medical Devices (in collaboration with the Conseil d'évaluation des technologies de la santé du Québec and the Hôpital du Sacré-cœur de Montréal)

Montréal

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Les 6 et 7 oct. 1994 : 4^e Symposium régional de l'Office canadien de coordination de l'évaluation des technologies de la santé (en collaboration avec le Conseil d'évaluation des technologies de la santé du Québec et l'Hôpital du Sacré-cœur de Montréal)

Montréal

M^{me} Nancy Quattrocchi, agente d'administration, OCCETS, 110-955, rue Green Valley, Ottawa, ON K2C 3V4; tél (613) 226-2553, fax (613) 226-5392

Oct. 6-8, 1994: Modified Lipoproteins and Atherosclerosis (satellite symposium of the 10th International Symposium on Atherosclerosis)

Whistler, BC

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