Approach of Polish medical students to ethical problems related to transplantation and the application of stem cells

EWA BAUM, MICHAL MUSIELAK

Abstract

Objectives: Success of transplantation depends not only on technological progress, but also on the availability of organs, which depends in turn on acceptance of transplantation by society. Medical education of society seems to be an important approach to solving this problem. We studied the opinions of Polish medical students about ethical aspects related to transplantation and the use of stem cells in organ transplantation. The development of techniques for isolating, breeding and reimplanting stem cells makes it possible to use them for these purposes. However, using stem cells in organ transplants, especially embryonic stem cells, is also the source of ethical dilemmas. Experts believe that the future of stem cells in organ transplantation depends not only on the advancement of biology, but also, to an equal extent, on the solving of the ethical considerations associated with this type of therapy. Material: 100 students from the first and 99 students from the last year of the medical study answered an anonymous questionnaire about medical problems related to transplantation and the use of embryonic stem cells, including ethical and religious aspects of their remarks. Results: Medical education increased knowledge about the medical and legal aspects of transplantation. Effect of religion on opinions about transplantation was declining with age. Students for whom religion was not very important declared a more liberal approach to ethical problems related to transplantation. Conclusions: Medical education increases the acceptance of transplantation by medical students and religious beliefs become less important in such decisions.

Key words: transplantation, embryonic stem cells, ethics, religion, education

Background

The twentieth century and the turn of the twenty-first have been a period of rapid progress in the field of biological sciences. Scientific discoveries constitute the foundation for the development of new medical technologies that are used in the treatment of various conditions. An example of this is the use of modern transplantology and the regenerative medicine.

Development of transplantation depends not only on progress in medicine but also on the availability of organs which can be used in that therapy. In Poland, a contemporary law regulating all procedures related to transplantation was introduced in 2005 [1]. Rule of alleged consent is adopted in that law however the family is asked for final permission to collect organs; a similar approach can be found in other European countries such as Belgium, France, Spain and Italy [2]. Application of the alleged consent rule helps in collection of organs and development of transplantation in many European countries, but in Poland it is not so effective. According to a survey carried out in 2003 in Poland by the Public Opinion Research Center, 90% of the Polish population accepts transplantation [3], but a survey performed by the same center in 2005 showed that only 74% of Poles accept transplantation [4]. At the same time, the number of successful transplantations in Poland is lower than in other European countries [5]. In Poland, 33 heart transplants are performed annually per ten million inhabitants, whereas in Germany that number is 50, in Finland 64 and in Spain 80 [2]. According to Nowacka, the small number of transplants performed in Poland is because of the low level of understanding of the issue by the average citizen [6]. It seems that Polish support of transplantation is mainly verbal and does not work in practice when family members are asked to give permission for use of organs from a deceased relative.

One may assume that this approach of Poles to the problem of transplantation is caused by socio-cultural and religious factors. About 95% of Poles declare their Roman Catholic faith, which may explain the potentially strong effect of the Church on decisions made by its members. The Roman Catholic Church, however, supports the idea of transplantation, but has many reservations about the usage of embryonic stem cells in that therapy [7]. Such fragmentary acceptance of transplantation may cause problems when somebody with limited medical knowledge about transplantation is asked to make a decision about the donation of their own or a deceased relative’s organs for transplantation. It is obvious that development of transplantation in Poland strongly depends not only on the development of available technology but also on increased approval of such treatment by potential organ donors. The broader education of society not only medically but also socioethically is therefore necessary.

We hypothesized that medical personnel play an important role in the education of the community about problems related to transplantation and such action may increase acceptance of such treatment. Therefore the goal of our study was evaluation of the approach of medical students to ethical aspects related to transplantation and application of embryonic stem cells with special stress put on their religious beliefs and progress of medical education.

Material and methods

The main goal of the study was assessment of the students’ attitude to medical problems related to transplantation, including the ethical and religious aspects of their attitude. Anonymous surveys were carried out in a population of the medical students of the Medical University in Poznań. Stu-
E. Baum, M. Musielak

Students from the first year (100 persons) and final year (99 persons) were asked to answer the following questions related to ethical problems caused by transplantation and regenerative medicine.

1) Are you aware of the legal regulations in Poland concerning the obtaining of organs for transplants?
2) Do you think that law concerning the obtaining of organs for transplants should also take into account religious considerations?
3) Are you in favor of using all types of transplantation techniques possible for treatment purposes?
4) In your opinion what principle should be applied when organs for transplants post mortem are obtained: alleged consent or direct consent?
5) What is your opinion about obtaining organs for transplant post mortem or in situ while the donor is alive?
6) In your opinion do the advantages of the potential usage of embryonic cells, i.e. no transplant rejection risk, outweigh the ethical doubts concerning the destruction of embryos?
7) Do you think that the aim of saving human life and health justifies the undertaking by scientists and doctors of all the scientific research that is currently possible regardless of its ethical dimensions?

Analysis of the obtained results was performed with the Fisher-Freeman-Halton test. A value of $p < 0.05$ was considered as significant.

Results

The population of the studied students was comparable and the details are presented in Table 1. The majority of the students were Roman Catholics.

Table 1. Description of the studied populations of students from the first and final years of medical school who participated in the survey

<table>
<thead>
<tr>
<th></th>
<th>First-year students</th>
<th>Final-year students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>Roman Catholic Faith</td>
<td>94%</td>
<td>83%</td>
</tr>
<tr>
<td>Religion is important</td>
<td>84%</td>
<td>75%</td>
</tr>
<tr>
<td>Religion is less important</td>
<td>16%</td>
<td>25%</td>
</tr>
</tbody>
</table>

First-year students declared less knowledge (19%) of the legal regulations concerning transplantation than did their colleagues in the final year (63%). Despite poor knowledge of the law regulating transplantation, 57% of students at the start of their medical education accepted therapeutic use of transplantation and that number was significantly increased at the end of the study (up to 97%). Among the first-year students who accepted the significant role of religion in their life approval of therapeutic use of transplantation was lower (50%) than among their colleagues for whom religion was less important (88%). Among students in the last year of the medical school, however, for whom religion was important, acceptance of the therapeutic use of transplantation was much higher (97%) than at the beginning of their study (50%). The majority (65%) of young students starting medical education suggested that religion should affect the law regulating transplantation whereas only 45% of students in the final year held similar views. The majority (79%) of students finishing medical education accepted alleged consent for organ donation for transplantation whereas only 50% of the first-year students had the same opinion. Students from the final year more often (90%) than students starting medical education (77%) accepted the acquisition of organs for transplantation from living donors. On the other hand, a similar percentage of students (89% from the first year and 79% from the final year) accepted post mortem collection of organs for transplantation. We found no differences between both studied populations when students were asked if the advantages of the potential use of embryonic cells outweighed the ethical doubts concerning the destruction of embryos (Fig. 1).

Fig. 1. Answers of the students in the first (blank columns) and final (black columns) years to the question asking if the advantages of the potential use of embryonic cells outweigh the ethical doubts concerning destruction of embryos.

Fig. 2. Answers of the students from the first (blank columns) and final (black columns) year to the question whether saving human life justifies the undertaking by scientists of all the scientific research that is currently possible regardless of its ethical dimensions.

Positive answers to that question were the most frequent in both groups, but there was also a significant group of responders who had no opinion.

There was also no difference between the studied groups when students were asked if the aim of saving human life and
improving health justifies the undertaking by scientists of all types of scientific research that are currently possible, regardless of any ethical dimensions (Fig. 2).

Contrary to answers to the previous question about usage of the embryonic stem cells, however, students from both studied populations did not accept large-scale undertaking of research aimed at saving human life without analysis of its ethical dimensions.

Discussion

According to statistical analysis applied in the survey, both studied populations were comparable, although there was a visible trend showing weaker importance of the religious beliefs declared by students in the final year of study compared with their younger colleagues (Table 1). That slight difference had no significant effect, however, on the obtained answers relating to ethical implications of the responders’ religious beliefs.

We found that medical education significantly increases knowledge of the law regulating transplantation. Students in the first year have limited knowledge about transplantation and acceptance of that therapeutic method is relatively low (57% of the studied population). It was clearly seen that religious beliefs have a strong influence on answers given by these students, and the majority (88%) of those who had a more liberal approach to religion accepted transplantation, whereas their more conservative colleagues were less keen (only 50% of the responders) to accept transplantation. Such findings are surprising, because the Roman Catholic Church supports organ donation, according to articles 2296 and 2301 of the Catechism [8]. As early as 1956 Pope Pius XII addressed the problem of transplantation, stressing its importance in the treatment of diseases for which there is no alternative therapy. Other documents of the Church, Carta degli operatori sanitari, signed in 1994 [9] and papal encyclical Evangelium vitae from 1995 [10], liken donation of organs to heroic gestures. In a survey performed in Poland by the Public Opinion Research Center in 2005, however, only 63% of responders declared that transplantation was accepted by the Roman Catholic Church and is in agreement with its teaching [4]. Therefore the opinions of the students in the first year of the medical school reflect the general, conservative approach of Poles to transplantation. Despite the rule of the alleged consent present in Polish law only 50% of the students in the first year accept such a concept. The majority of these students, however, gave a positive answer to the question: Do the advantages of the potential usage of the embryonic cells outweigh the ethical doubts concerning destruction of embryos? (Fig. 1); this again is in disagreement with the position of the Church on that issue. Pope John Paul II said, in the encyclical Evangelium vitae, that the life of a human being must be defended from the moment of its conception [11]. Such an approach excludes the use of stem cells from embryos. It seems therefore that students starting medical education have very limited and superficial knowledge about transplantation and the majority are not able to reconcile ethical problems related to that therapy with their declared religious belief. Such superficial and sometimes contradictory attitudes are characteristic of Polish Roman Catholics [12].

The results of our survey show explicitly that education in medical school significantly increases acceptance of transplantation and that change is also seen among students for whom religion is important: 97% of responders accepted therapeutic transplantation compared with 50% in the respective group among the first-year students. The influence of the Church on the students’ opinion about transplantation seems to be inconsistent. On the one hand, students both starting medical education and at the end of medical school are not very liberal when asked if saving human life justifies all scientific research regardless of its ethical dimensions (Fig. 2), but the majority of them accept usage of embryonic cells for transplantation (Fig. 1), which is contra to the norms advocated by the Roman Catholic Church. Opposing answers to both questions suggest that factors other than religion influence students’ opinions about transplantation.

We conclude that medical education has a positive effect on the students’ approach to transplantation, which suggests that they may play an important role in educating the rest of society. Religious beliefs have no consistent effect on the students’ approach to transplantation, and their importance decreases with time, but they may still have an unpredictable influence on solving the ethical dilemmas related to transplantation and application of the stem cells in therapy.

References

[9] Pontificio Consiglio Della Pastorale per gli Operatori Sanitari, Carta degli operatori sanitari, Vatican, Rome, 1995