

## **Kidney transplantation in Jehovah's Witnesses – the Croatian perspective**

### **Abstract**

Jehovah's Witnesses are recognized for their blood transfusion refusal. Instead of blood transfusion refusal, they accept organ transplantation. Kidney transplantation is the best modality for the treatment of end-stage renal disease, but in the case of severe perioperative blood loss, blood transfusion is required. Because of the blood transfusion refusal, most of the transplant centers worldwide, including those in Croatia too, refuse to perform kidney transplantation in Jehovah's Witnesses patients. University Hospital Rijeka is the only center in Croatia that performs kidney transplantation in Jehovah's Witnesses and two such transplantations were successfully performed. The legislation in Croatia, as in many other countries, has not recognized some specific conditions related to Jehovah's Witnesses. In this chapter, we present our experience and different ethical and medico-legal dilemmas about kidney transplantation in Jehovah's Witnesses in Croatia.

### **1. Introduction**

The Jehovah's Witness religion was founded in 1872 in Pittsburgh, Pennsylvania, the United States of America. At the moment they have about 8.7 million members worldwide. They identify themselves as Christians, but their beliefs are different from other Christians – orthodox, protestant, catholic. They are recognized for their special door-to-door evangelism, military, and blood transfusion refusal.<sup>1</sup>

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<sup>1</sup> Paul J. Cummins, Federico Nicoli: Justice and respect for autonomy: Jehovah's Witnesses and kidney transplant. In: *Journal of Clinical Ethics* 29 (2018), pp. 305–312.

Jehovah's Witnesses refusal of blood transfusion is, probably, the most well-known example of a religious-based refusal of medical intervention. The roots of this decision are going after World War II. The Jehovah's Witnesses religion was at the beginning administered by the Watchtower Bible and Tract Society of Pennsylvania (the Watchtower Society). In 1945, the Watchtower Society recommended to their members against blood transfusion and against receiving blood products.<sup>2</sup> In 1967, when the era of transplantation of solid organs started, the Watchtower Society also imposed a ban on organ transplantation. Later, the Watchtower Society revised its guidance on blood transfusion and organ transplantation. They rejected the blood transfusion and use of stored autologous blood, but Jehovah's Witnesses should consult their personal conscience to decide to receive acute normovolemic hemodilution, intraoperative blood salvage and blood fractions as albumins, immunoglobulins or clotting factors. Instead, they still do not accept transfusion of whole blood, red blood cells, platelets, plasma, hemoglobin solution, stored autologous blood and blood donation. Afterward, the Watchtower Society revised its previous statement against organ transplantation and changed it to a matter of personal conscience.<sup>3</sup>

As a consequence of that, most of the Jehovah's Witnesses population refuses transfusion of homologous and autologous blood products.<sup>4</sup> This refusal is based on their interpretation of the Bible. According to their beliefs, acceptance of blood or blood products will forfeit their chance for resurrection and eternal salvation. Most Jehovah's Witnesses accepts crystalloid solutions, synthetic colloid solutions, hemoglobin substitutes as perfluorocarbons or artificial hemoglobin solution, and recombinant proteins as erythropoietin or activated factor VII. The whole blood, red blood cells, platelets and plasma are unacceptable. Individual decisions need to be made regarding the administration of the purified fractions of plasma as immunoglobulins and albumin or solid organ transplants. Addition-

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<sup>2</sup> Cummins, Nicoli: Justice and respect (Note 1).

<sup>3</sup> Cummins, Nicoli: Justice and respect (Note 1).

<sup>4</sup> Cummins, Nicoli: Justice and respect (Note 1); Enrique Lledo-Garcia: Jehovah's Witnesses and bloodless kidney transplants. Considering the ethical dilemmas transplantation urologists may face. In: *European Urology Today* 33 (2021), p. 43.

ally, patients need to make personal decisions regarding heart or venovenous bypasses, hemodilution or intraoperative red cell salvage.<sup>5</sup>

Methods of renal replacement therapy include hemodialysis, peritoneal dialysis, and as the most efficient method, kidney transplantation. Kidney transplantation is the best treatment modality for patients with end-stage renal disease. Compared to hemodialysis and peritoneal dialysis it offers better survival and quality of life. Despite the improved prognosis after successful kidney transplantation, cardiovascular diseases remain the leading cause of death in this specific population.

Kidney transplantation is a major surgical procedure including performing a vascular anastomosis between major pelvic vessels and graft vessels. At least two vascular anastomoses were performed for each patient and they can be a major source of possible bleeding. Intraoperative and/or postoperative bleeding is a complication that can be found in up to 14 % of kidney transplanted patients.<sup>6</sup> Sometimes severe, life-threatening blood loss can develop which needs blood transfusion as the standard and most effective therapeutic procedure, sometimes along with surgical management.

According to Croatian law, every citizen has the right to access to healthcare, including kidney transplantation, no matter of his/her ethnicity, religion, nationality or social status. In the Republic of Croatia, in the year 2017, there were 3,730 patients on renal replacement therapy.<sup>7</sup> Since 2007 Croatia has been a member of the Eurotransplant. The Eurotransplant is international and non-profit organization responsible for the allocation of donor organs in Austria, Belgium, Croatia, Germany, Hungary, Luxembourg, Netherlands and Slovenia. The membership in Eurotransplant gave to Croatian transplant pro-

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<sup>5</sup> Lledo-Garcia: Jehovah's Witnesses (Note 4).

<sup>6</sup> Mehdi Salehipour, Hesmatollah Salahi, Hamed Jalaeian, Ali Bahador, Saman Nikeghbalian, Ehsan Barzideh, Ali Ariaifar, Seved Ali Malek-Hosseini: Vascular complications following 1500 consecutive living and cadaveric donor renal transplantations: a single center study. In: Saudi Journal of Kidney Diseases and Transplantation 20 (2009), pp. 570–572; Jacentha Buggs, Robert Shaw, Frederic Montz, Venkat Meruva, Ebonie Rogers, Ambui Kumar, Victor Bowers: Operative versus nonoperative management of hemorrhage in the postoperative kidney transplant patient. In: The American Surgeon 86 (2020), pp. 685–689.

<sup>7</sup> Croatian Society of Nephrology, Dialysis and Transplantation: Croatian Registry of Renal Replacement Therapy – 2017. <https://www.hdndt.org/registar-nadomjestanj-a-bubrezne-funkcije> (accessed on 7.2.2023).

gram additional stimulus rendering our kidney transplantation program, including donor program, one of the most effective in Europe.

In Croatia, there are four kidney transplant centers. The oldest one, since 1971, is in Rijeka and it is also the Croatian Referral Center for Kidney Transplantation, Department of Urology, University Hospital Rijeka.<sup>8</sup> Other centers are Clinical Hospital Merkur in Zagreb, Clinical Hospital Center Zagreb, and Clinical Hospital Center Osijek. In the year 2020, there were 98 kidney transplantations performed in all Croatian transplant centers together.

Because of blood transfusion refusal, most of the Croatian transplant centers refuse to perform kidney transplantation in Jehovah's Witnesses patients. The University Hospital Rijeka is the only center in Croatia to perform kidney transplantation in Jehovah's Witnesses and two such kidney transplantations were so far performed successfully.

In this article, we will describe our experience and potential problems with kidney transplantation in this specific group of patients, with an emphasis on healthcare in Croatia.

## 2. Patients and Methods

For this article, we analyzed literature about kidney transplantation in Jehovah's Witnesses. The search was performed using the PubMed database. Also, the basic data of our patients, who underwent transplantation, were presented. All patient's data were presented in such a way to preserve their anonymity. Another source of information was the Croatian laws which are related to this topic. Written informed consent was obtained from both patients included in this article and we obtained approval from the Ethical Committee of University Hospital Rijeka, Rijeka, Croatia.

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<sup>8</sup> Dean Markić, Josip Španjol: Kidney transplantation in Rijeka – the first fifty years. In: *Medicina Fluminensis* 56 (2020), pp. 354–357; Davor Primc, Sanjin Rački, Miha Arnol, Marin Marinović, Ana Fućak-Primc, Amir Muzur, Simon Hawlina, Dean Markić: The beginnings of kidney transplantation in south-east Europe. In: *Acta Clinica Croatica* 59 (2020), pp. 135–140.

### 3. Results

There were two Jehovah's Witnesses patients with end stage renal disease that underwent kidney transplantation in Croatia to date. Both of them were performed in the Department of Urology, University Hospital Rijeka.

Our patients started with dialysis, but kidney transplantation was their preferred therapeutic option. The pre-transplant evaluation was standard and they met the criteria for the Eurotransplant waiting list. Both of them signed statements that they would refuse blood transfusion in any case because of their religious beliefs. The informed consent for kidney transplantation was obtained from patients before transplantation. Both patients were in good physical and mental condition. To achieve better preoperative status, the patients received iron supplements.

Both kidney transplantations were performed in 2015 and they received death-donor kidneys. The patients were male, 61 and 39 years old, and suffered from chronic glomerulonephritis as the principal kidney disease. The cold ischemia time was 11 hours and 16 minutes for the first and 12 hours and 37 minutes for the second patient. The duration of both operations was 180 minutes, with negligible blood loss. Kidney transplantation was performed in the iliac fossa by a standard extraperitoneal approach. The kidney was transplanted into the contralateral iliac fossa, with the main aim of the renal pelvis becoming the most superficial hilar structure. External iliac arteries and veins were the sites for renal anastomosis. The ureter was implanted in the urinary bladder using the extravesical Lich-Gregoir technique. JJ endoprosthesis was intraoperatively inserted and extracted 6 weeks after the operation to prevent urological complications. The early post-transplant course was uneventful in both patients. In one of them, lymphocele was visualized six months after the kidney transplantation. Percutaneous sclerosation of lymphocele was unsuccessful and laparoscopic marsupialisation was performed. Both patients have excellent kidney function seven years after the kidney transplantation.

## 4. Discussion

The Jehovah's Witnesses refusal of blood transfusion can be considered as a medico-legal or ethical dilemma. The Jehovah's Witnesses refusal of lifesaving blood transfusion is a morally accepted feature based on patient autonomy. The principle of respect for autonomy is associated with allowing or enabling patients to make their own decisions about which healthcare interventions they will or will not allow after being properly informed. It is also important that with his or her choice the patient does not make any harm to another individual. In the field of organ transplantation, this is especially related to a living donor, as a family member or a friend – the latter being a very unusual practice in Croatia.<sup>9</sup> But, when Jehovah's Witness cannot identify a living donor, which is the most frequent situation in Croatia, he or she is waitlisted for cadaveric kidney transplantation. In such a case, the transplant team may face an ethical dilemma. Certainly, we want to give a patient the best possible care – kidney transplantation in this specific situation. However, a question appears if a patient who refuses blood transfusion is acceptable for the list, at all? The majority of patients on the waiting list are willing to accept all care to optimize the success of kidney transplantation. On the contrary, with Jehovah's Witnesses refusal of blood transfusion there is a fear that organs will go to someone non-completely adherent to the proposed healthcare strategy. In the literature, we found two opinions from the ethical position for possible denying Jehovah's Witness to be transplanted – »in the name of justice«:

1. Is it justified to allocate organs for a patient with a request transfusion-free kidney transplantation, which can decrease the chance of other patients to timely obtain appropriate medical treatment?
2. »All resources should be allocated to patients who comply with the standard of care.«<sup>10</sup>

Their rationality is that permitting transfusion-free kidney transplantation puts more lives at risk than with transplantation in only fully

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<sup>9</sup> Cummins, Nicoli: Justice and respect (Note 1); Lledo-Garcia: Jehovah's Witnesses (Note 4).

<sup>10</sup> Cummins, Nicoli: Justice and respect (Note 1); Lledo-Garcia: Jehovah's Witnesses (Note 4).

complaint recipients – triage concept.<sup>11</sup> Some authors proposed acceptance of »rescue transfusion« as a prerequisite for Jehovah's Witnesses to be included in the transplant program.<sup>12</sup> On the other hand, in 2013, the Board of Directors of OPTN/UNOS in the United States of America approved changes to its allocation criteria which take survival benefit into account.<sup>13</sup> The aim of this policy is to match kidneys expected to function the longest with patients whose life expectancy is longer. In such a way, the survival benefit is ethically more acceptable compared to the triage concept whether a patient is more likely to die following transfusion-free than another patient.

Another possible issue is does neglecting of Jehovah's Witnesses will for their demands about the refusal of blood transfusion is violating the individual autonomy. The basics for this are that their refusal is based on the recommendation of their authorities. There is a possibility that the patient's refusal does not express only an autonomous choice. So, it is a question if possible giving blood products will violate individual autonomy?<sup>14</sup>

Medical ethics should be in close connection with modern medicine and science. The policy of excluding Jehovah's Witnesses because of seeking transfusion-free kidney transplantation must be documented by adequate and exact data from the field of transplant medicine.

We analyzed three studies and a few case reports reporting kidney transplantation in this population. Kaufman et al. from the University of Minnesota documented their experience from 13 Jehovah's Witnesses kidney transplant patients comparing standard transplant population and did not find a difference between the graft and

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<sup>11</sup> Cummins, Nicoli: Justice and respect (Note 1).

<sup>12</sup> Ugo Boggi, Fabio Vistoli, Marco Del Chiaro, Chiara Croce, Stefano Signori, Piero Marchetti, Stefano Del Prato, Gaetano Rizzo, Franco Mosca: Kidney and pancreas transplantation in Jehovah's Witnesses: ethical and practical implications. In: Transplantation Proceedings 36 (2004), pp. 601–602; Katrina A. Bramstedt: Transfusion contracts for Jehovah's Witnesses receiving organ transplants: ethical necessity or coercive pact. In: Journal of Medical Ethics 32 (2006), pp. 193–195.

<sup>13</sup> Cummins, Nicoli: Justice and respect (Note 1).

<sup>14</sup> Cummins, Nicoli: Justice and respect (Note 1); Osamu Muramoto: Bioethics of the refusal of blood by Jehovah's Witnesses: Part 3. A proposal for a don't-ask-don't-tell policy. In: Journal of Medical Ethics 25 (1999), pp. 463–468.

patient survival.<sup>15</sup> The authors did not report the blood loss during the operation. Also, the authors noticed that Jehovah's Witnesses had increased susceptibility to early rejection episodes – Jehovah's Witnesses patients refused potent immunosuppressive T-cell depleting agent because it was perceived as a blood product by all but one of the recipients. Moreover, the consequence of early graft dysfunction from rejection was particularly detrimental to two patients who developed severe anemia and died. The authors concluded that kidney transplantation in Jehovah's Witnesses can be safely performed in most cases, except in those with anemia, and that they belong to a high-risk group for having early rejection episodes.<sup>16</sup> Also, we must notice that recombinant erythropoietin had just been introduced into clinical practice at that time. Kandaswamy et al. also found similar graft and patient survival of 50 Jehovah's Witnesses transplanted patients – kidney transplantation and combined kidney/pancreas transplantation – compared to standard transplant population up to 10 years after kidney transplantation.<sup>17</sup> The study from Brazil which included 143 transplanted Jehovah's Witnesses showed that when blood transfusion can be safely avoided, in the majority of Jehovah's Witnesses kidney transplantation results with equal graft and patient survival.<sup>18</sup> In a few case reports the successful kidney transplantation in Jehovah's Witnesses was also noticed.<sup>19</sup>

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<sup>15</sup> Dixon B. Kaufman, David E.R. Sutherland, David S. Fryd, Nancy L. Ascher, Richard L. Simmons, John S. Najarian: A single-center experience of renal transplantation in thirteen Jehovah's Witnesses. In: *Transplantation* 45 (1988), pp. 1045–1049.

<sup>16</sup> Kaufman, Sutherland, Fryd, Ascher, Simmons, Najarian: A single-center experience (Note 15).

<sup>17</sup> Raja Kandaswamy, Thigarajan Ramcharan, Arthur J. Matas: Kidney and kidney-pancreas transplants in Jehovah's Witnesses – a single center experience with 50 transplants. In: *Acta Chirurgica Austriaca* 33 (2001), p. 3.

<sup>18</sup> David Carvalho Fiel, Klaus Nunes Ficher, Julia Bernardi Taddeo, Kamilla Linhares Silva, Claudia Rosso Felipe, Wilson Aguiar, Jose Daniel Braz Cardone, Renato Demarchi Foresto, Helio Tedesco-Silva Jr, Jose Medina-Pestana: Is there sufficient evidence justifying limited access of Jehovah's Witness patients to kidney transplantation? In: *Transplantation* 105 (2021), pp. 249–254.

<sup>19</sup> Giselle Guerra, Mariella Ortigosa-Goggins, Jeffrey J. Gaynor, Gaetano Ciancio: Deceased donor kidney transplant in a 70-year-old Jehovah's Witness patient: to transplant or not to transplant—a case report. In: *Annals of Translational Medicine* 8 (2020), <http://dx.doi.org/10.21037/atm-20-3593>; Goce Spasovski, Oliver Stankov, Jelka Masin-Spasovska: Living-related donor kidney transplantation in Jehovah's Witness patient: the importance of EPO preconditioning. In: *International Urology and Nephrology* 46 (2014), pp. 669–670; Arthur Greenberg, Iain Macphee,

Therefore, from the strict medical point of the view and considering the available data, kidney transplantation in Jehovah's Witnesses patients is feasible, with graft and patient survival compared to the general transplant population. However, precaution is needed due to the possible problems in anemic patients. Nevertheless, the refusal of blood transfusion is not associated with a higher risk of organ loss than transplantation that is not transfusion-free. The studies show that transfusion-free kidney transplantation is possible and emphasize the value of preoperative and intraoperative strategies which can be helpful in this specific population.

The strategies which can be helpful for the avoidance of blood transfusion included preconditioning of the patient with recombinant erythropoietin, iron, B12 and folic acid, which optimizes their condition for the time of the surgery. Interventions such as acute normovolaemic hemodilution and cell salvage should be utilized to minimize the effective blood loss intraoperatively.<sup>20</sup> Still, despite the measures, no one can predict that major perioperative bleeding will not ensue.

Nevertheless, Jehovah's Witnesses patients and their families must be aware that even with all the aforementioned strategies, uncorrected anemia can cause prolonged postoperative course with longer hospitalization time, higher anxiety level and a higher financial cost. The most difficult consequence of non-corrected anemia can be a lethal outcome.<sup>21</sup> This is especially true for elderly patients above 65 years of age.<sup>22</sup>

Medico-legal practice is very important to patients and health-care professionals, especially in a such sensitive area as organ transplantation in Jehovah's Witnesses. In Croatia, we must follow the two legal systems: the national one and the European – as a member of the European Union.

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Joyce Popoola, Deborah Sage, Ramiz Iqbal, Nicoletta Fossati, Sarah Heap, Mohamed Morsy, Nicos Kessarlis: HLA antibody-incompatible kidney transplantation between Jehovah's Witnesses – a case report. In: *Transplantation Proceedings* 45 (2013), pp. 2069–2071.

<sup>20</sup> Rodrigo S. Figueiredo, Rohan G. Thakkar, Paul R. Ainley, Colin H. Wilson: Review of abdominal solid organ transplantation in Jehovah's Witness patients. In: *World Journal of Transplantation* 9 (2019), pp. 94–102.

<sup>21</sup> Kaufman, Sutherland, Fryd, Ascher, Simmons, Najarian: A single-center experience (Note 15); Guerra, Ortigosa-Goggins, Gaynor, Ciancio: Deceased donor (Note 19).

<sup>22</sup> Guerra, Ortigosa-Goggins, Gaynor, Ciancio: Deceased donor (Note 19).

European Convention on Human Rights is an international convention to protect human rights and political freedoms in Europe.<sup>23</sup> Drafted in 1950 by the then newly formed Council of Europe, the convention entered into force on 3 September 1953. All Council of Europe member states – including Croatia – are parties to the Convention. The Convention established the European Court of Human Rights and any person who feels that his/her rights have been violated under the Convention by a state party can take a case to the Court. Judgments finding violations relate to the state of concern and they are obliged to execute them. The Committee of Ministers of the Council of Europe monitors the execution of judgments, particularly to ensure that payments awarded by the Court appropriately compensate applicants for the damage they have sustained. The Convention has several protocols, which amend the Convention framework. Article 8 of European Convention on Human Rights is about respect for private and family life. In general, this article is often cited as a person's right to self-determination and their physical integrity, including acceptance or denying specific medical treatment. Croatian legislation includes a few laws which can be problematic for the issue of blood transfusion refusal in the field of organ transplantation. The Law in Croatia guarantees that treatment must be in accordance with the patient's approval or refusal of a specific medical procedure – HealthCare Act, Act on the Protection of Patients' Rights.<sup>24</sup> On the other hand, medical staff or institutions can refuse to perform the medical procedure if a patient refuses to accept a proposed established procedure, like blood transfusion, for example. And when a physician or the institution were not able to accept that risk, the patient should be transferred to another physician or institution capable of such treatment modality.<sup>25</sup> Irrespective of a patient's right to choose a treatment, in life-threatening situation lifesaving is mandatory for physicians, as regulated in the Article

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<sup>23</sup> Council of Europe: European Convention on Human Rights. <https://www.equalityhumanrights.com/en/what-european-convention-human-rights> (accessed on 7.2.2023).

<sup>24</sup> Official Gazette of Croatia, 77/16: HealthCare Act. <https://www.zakon.hr/z/190/Zakon-o-zdravstvenoj-zaštiti> (accessed on 7.2.2023); Official Gazette of Croatia, 169/04: Act on the Protection of Patients' Rights. <https://www.zakon.hr/z/255/Zakon-o-zaštiti-prava-pacijenata> (accessed on 7.2.2023).

<sup>25</sup> Official Gazette of Croatia, 121/03: Act on Medical Practice. <https://www.zakon.hr/z/405/Zakon-o-liječništvu> (accessed on 7.2.2023).

16 of the Act on the Protection of Patients' Rights.<sup>26</sup> The Criminal Code in article 181 depicts medical malpractice »if a physician applies obviously inadequate means or method of treatment or in some other way obviously fails to follow the rules of healthcare profession or obviously acts carelessly, thereby causing the deterioration of an illness or the impairment of the health of another person or even death of the patient«, with possible imprisonment up to twelve years.<sup>27</sup> Article 183 of the same Code – failure to render medical aid in emergencies – describes a physician's need for immediate medical aid to a person in need of such aid, because of the risk that he or she would suffer permanent harmful consequences on his or her health or life, with possible imprisonment up to three years.<sup>28</sup> It is obvious that Croatian law includes contradictory rules and that the European one makes additional confusion for healthcare professionals.<sup>29</sup>

Thus, in reality, we have two dilemmas.

First, should Jehovah's Witnesses be enlisted for kidney transplantation because of the blood transfusion refusal? The law in Croatia is very clear: every citizen has an equal right to the best possible healthcare, no matter of his/her ethnicity, religion, nationality, etc. The ethical dilemma may exist but the usefulness of kidney transplantation in these patients overweighs some ethical concerns. The opinions of the authors are that most of the Croatian transplant community support the right of Jehovah's Witnesses to the best possible medical treatment – kidney transplantation in this case.

The second dilemma is more difficult, what to do if a Jehovah's Witnesses patient needs lifesaving blood transfusion? Compared with the first dilemma, which is more theoretical, the second one is far more practical, with profound consequences. From an ethical point of view, the patient has a total right to a made autonomous decision. On the other side, healthcare professionals are willing to help the patient and give him the best possible care. The medicolegal aspect is far more complicated and in clear contradiction. On one side the law in Croatia allows medical staff or institutions to refuse to perform the

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<sup>26</sup> Official Gazette of Croatia: Act on the Protection (Note 24).

<sup>27</sup> Official Gazette of Croatia, 125/11: Criminal Code. <https://www.zakon.hr/z/98/Kazneni-zakon> (accessed on 7.2.2023).

<sup>28</sup> Official Gazette of Croatia: Criminal Code (Note 27).

<sup>29</sup> Sunčana Roksandić Vidlička, Lada Zibar, Jozo Čizmić, Kristijan Grđan: Rights of Jehovah's witnesses on surgical health care in the Republic of Croatia – de lege lata. In: *Liječnički Vjesnik* 139 (2017), pp. 91–98.

medical procedure if a patient refuses to accept proposed established procedures, like blood transfusion, for example. On another side, there is a legal obligation that in life-saving situations physicians must try to save a patient's life. The European law also supports the patient's will and choice. Thus, whatever action healthcare professionals chose to do – or not to do – they break some law. These medico-legal contradictions are probably the main reason why the majority of transplant centers in Croatia – and worldwide, too – refuse to perform kidney transplantation in Jehovah's Witnesses. They want to avoid this situation and use medicolegal understatement as an excuse for not performing kidney transplantation, or some other medical procedures, in Jehovah's Witnesses. At the same time, we must be aware that these patients need the best medical care for their medical problems.

According to the best of our knowledge, there is not any internal document, i.e., guidelines or regulations of healthcare institutions or any medico-legal act which specifically addresses this topic. Consecutively, in practice, the healthcare professionals are on an »open field« without an adequate guide. This must be changed and improved, because of patients and healthcare professionals too.

How to make an improvement? Firstly, the problem must be recognized, presented, and a multidisciplinary team, i.e. patients, healthcare professionals, jurists, ethicists, should be included in its solving. All sides – or better the partner sides – must express their expectations and their concerns. It is notorious that healthcare professionals want to give the best possible healthcare – kidney transplantation – to Jehovah's Witnesses and this is the main goal for them and their patients. Jehovah's Witnesses must express their concern about receiving blood transfusion against their will, which is against their religious believes. Healthcare professionals must express their concern about passive behavior in life-threatening situations, with possible legal implications of their decision. Authors strongly believe that in such specific situations, national legislation in conjunction with professional associations and patients must make an appropriate and specific act or guidelines that will lead both sides through this specific situation.

## 5. Conclusion

Kidney transplantation is the best possible treatment modality for patients with end stage renal disease, which are capable and willing to be transplanted. This is also true for properly selected Jehovah's Witnesses end stage renal disease patients. Despite some ethical and medico-legal dilemmas, kidney transplantation must be offered to this patient population. The existing passive resistance and possible avoidance of their inclusion into the transplant program will be better solved with appropriate and specific acts or guidelines that will lead both sides through the specific situation of blood transfusion refusal in life-threatening situations.

We strongly believe that every patient has the right to the best possible healthcare. This must be done by accepting the patient's will and choice, but also the rights and beliefs of healthcare professionals. Thus, both sides will know what they can expect and how to react, without fear of violating their will, choice, beliefs or law.

