# Critical analysis of the use of potassium chloride in abortions and fetal distress

# Análisis crítico sobre el uso de cloruro de potasio en abortos y sufrimiento fetal

Agustín Antonio Herrera Fragoso\*
UNESCO Chair in Bioethics and Human Rights, Rome, Italy

Anastasia Nebel Herrera\*\*
Universidad Popular Autónoma del Estado de Puebla

https://doi.org/10.36105/mye.2025v36n1.07

#### **Abstract**

This article examines the use of potassium chloride (KCI) in abortions after 20 weeks gestation and the ethical, medical, and legal implications of this practice. There are concerns about possible fetal distress, as research indicates that the fetus may experience pain earlier than

Received: 11/09/2024 Acceptance: 19/09/2024

<sup>\*</sup> D. in Law, researcher at the Universidad Popular Autónoma del Estado de Puebla-CONCYTEP, Research Scholar of the UNESCO Chair in Bioethics and Human Rights, Rome, Italy. Associate Researcher at the Faculty of Bioethics, Universidad Anáhuac México, Mexico. E-mail: <a href="mailto:agustinantonio.herrera@upaep.mx">agustinantonio.herrera@upaep.mx</a> https://orcid.org/0000-0002-2401-6141

<sup>\*\*</sup> Medical intern in social service at the Universidad Popular Autónoma del Estado de Puebla, México.

previously thought. In addition, the use of KCI, banned in animal euthanasia because of the pain it causes, is contradictory when its use on human fetuses is supported. The text calls for a review of current policies so that they conform to scientific evidence and respect the dignity of all involved.

Keywords: sensitivity, human rights, person, viability.

#### 1. Introduction

The secret of freedom lies in educating people, while the secret of tyranny is in keeping them ignorant (1). Maximilien Robespierre

# 1.1. Legal Aspects

Until the year 2022, in the International Classification of Diseases (ICD) induced abortion was defined as: "the removal of a non-viable fetus from the maternal uterus" (2). This implied that, once extrauterine fetal viability was reached, around 22 weeks of gestation, the removal of a baby from the maternal uterus was no longer considered an abortion, but an early delivery if the baby survived, or infanticide if it did not.

For this reason, many legislatures prohibited abortion after the 20th week of gestation and the World Health Organization (WHO) guidelines on policies and standards for safe abortion indicated that fetal death must be induced prior to fetal removal after that date (3).

However, with the publication of the new edition of the ICD, this definition changed. Abortion is now described as "the complete expulsion or removal of an embryo or fetus from a woman (regardless of the duration of the pregnancy), following a deliberate termination of an ongoing pregnancy by medical or surgical means, which is not intended to result in a live birth" (4). In this way, the death of

the fetus is encompassed in the term, which indirectly implies a liberation from the time limit, and in a certain way de-dramatizes the event.

This is undoubtedly a component that has favored the extension of temporality in the legislative sphere in favor of induced abortion, although abortion laws vary significantly among countries. In the case of Europe, Poland has allowed abortion only in cases of rape, incest, or endangerment of maternal life, following a near-total ban in 2021. In Ireland, abortion has been legal up to 12 weeks gestation since the repeal of the eighth amendment in 2018, although the government has faced pressure to extend this deadline. Spain allows abortion up to 14 weeks, or up to 22 weeks in cases of serious health risks to the mother or fetal malformations, and although there are no immediate plans to change, the legislation is the subject of regular debate. Germany allows abortion up to 12 weeks under certain conditions, albeit with a mandatory period of prior counseling. France extended the abortion limit to 16 weeks in 2022, reflecting a shift to a more permissive approach culminating in the inclusion of the right to abortion in its Constitution on 4 March 2024 (5,6).

In Latin America, abortion is permitted to a lesser extent and under different circumstances. Cuba, where it has been legal and free of charge up to 12 weeks of gestation since 1965, is one of the pioneering countries in this area. Uruguay decriminalizes abortion up to 12 weeks of gestation. In cases of rape, the limit is extended to 14 weeks, and it is also allowed when there is a risk to the woman's life or fetal malformations incompatible with extrauterine life. Recently, Argentina legalized abortion up to 14 weeks of gestation, while the Constitutional Court of Colombia decriminalized abortion up to 24 weeks of gestation. After that period, abortion is permitted in cases of rape, risk to the woman's life or health, and severe fetal malformations. In our country, Mexico City and some states such as Oaxaca, Veracruz and Hidalgo have decriminalized abortion up to 12 weeks of gestation, although in the context of NOM 046 it is extended to 20 weeks (6,7,8).

Due to the importance of the change of paradigm in this matter, it is necessary to refer to the United States Supreme Court Rulings Roe v. Wade (1973) (9) where abortion is established as a woman's right, under the protection of her right to privacy and Planned Parenthood v. Casey (1992) (10) extends the terms for the viability of the fetus up to 23 weeks of gestation. On June 24, 2024, it handed down the judgment in the Dobbs v. Jackson Women's Health Organization case (11), explicitly overturning the previous rulings, a reversal in the temporality in some states of the United States and putting an end to a period of almost half a century in which abortion was considered a constitutional right in that country.

#### 1.2. Bioethical concerns

Due to the ever-increasing rise of abortion, a worldwide mobilization of research was generated in order to establish safe and uniform practices, which materialized in the document published in 2012 by the who on guidelines and policies for health services on safe abortion (3).

However, this document has not been revised since then and technological advances have brought to light data unknown at that time that have important implications. Among others, the onset of fetal sensory capacity and, related to this, the possibility of fetal distress, a matter currently under debate, since both surgical and pharmacological procedures recommended for the practice of safe abortions are not innocuous.

In fact, the procedures and regulations as found in the who guidelines focus on the pregnant woman without ever mentioning the fetus (3).

#### 1.3. Methodology

This article follows a qualitative approach, based on the critical analysis of various scientific, legal and bioethical sources. To this end, an

exhaustive literature review was conducted in academic databases such as PubMed, Google Scholar, BASE, Scopus, searching for studies related to the use of potassium chloride (KCl) in abortions, especially in advanced gestations, as well as research on fetal distress and pain perception.

In addition, national and international regulations related to abortion and the use of KCl were examined, comparing regulatory frameworks in different regions of the world. Bioethical guidelines, such as those published by who and other agencies, were reviewed to identify discrepancies between medical practice and regulations regarding the use of KCl in human and animal medical procedures.

The analysis included recent studies on fetal sensory and neurological development to assess the timing of pain perception. Finally, bioethical documents dealing with human dignity and fetal rights were reviewed, integrating legal, medical and ethical approaches that support the conclusions and recommendations made in the article.

# 2. Abortion procedures and methods

It is not necessary to resort to the devil to understand evil. Evil belongs to the drama of human freedom (12). Rüdiger Safranski

There are two main methods of abortion: pharmacological and surgical. Pharmacological abortion, recommended up to 14 weeks, uses mifepristone and misoprostol to provoke the expulsion of the embryo and/or fetus, without the need for surgical instrumentation or anesthesia, with an experience similar to heavy menstruation. Surgical abortion, preferred for pregnancies up to 12-14 weeks, uses vacuum aspiration for extraction. For pregnancies beyond 14 weeks, dilatation and evacuation by curettage is performed, which involves greater pain and risk, with removal of the fetus and placenta by vacuum aspiration and forceps, followed by curettage to ensure complete evacuation (3).

In pregnancies over 20 weeks, the "safe abortion" manual recommends induction of fetal death prior to the procedure by intra-amniotic injection of digoxin or intracardiac administration of KCl, this being the method of first choice because of its better maternal safety profile (3).

It should be specified that potassium chloride is a salt usually used in potassium depletion replacement. One of the main adverse risks in the precipitated intravenous administration or supra-therapeutic doses is the hyperkalemia generated, which rapidly leads to muscular paralysis and cardiovascular collapse with cardiac failure, due to the imbalance in the electrochemical gradient that it generates (13,14).

Given the early lethal nature of this effect, its use began at the end of the 1990s in abortions of abnormal products with advanced gestations, in order to reduce the traumatic aspect of the event for both the patient and the operators, and thus protect a woman's decision to abort from emotional elements (15).

Aspects of efficiency and technical efficacy were also taken into consideration, such as the issue of unnecessary post-abortion resuscitation in the case of viable fetuses. Since that period, the use of drugs that induce fetal death has been democratized in clinical practice. Moreover, their use is associated with a decrease in intra- and post-procedural complications.

However, Tufa et al. (16) mention that there is still a literature gap regarding their safety profile. In their meta-analysis, feticide with intracardiac injection of potassium chloride effectively reduces the duration of the dilatation and evacuation procedure, but is associated with more pain and uterine atony, as well as a higher rate of cervical lacerations and even maternal death (17-19).

On the other hand, ethical-legal aspects also come into play. Several legislations require ensuring fetal death before performing an abortion procedure, as is the case in the United States, United Kingdom, Canada, Australia and Germany, since fetal sensitivity is possible from the 20-23rd week (20).

# 3. Fetal suffering

The banality of evil is manifested when the administrative routine and obedience to the rules and obedience to rules dehumanize people and allow for the perpetuation of acts and allow for the perpetuation of acts that inflict suffering without those who carry them out reflecting on the real harm they cause (21).

Hanna Arendt

It has been accepted by consensus that fetal suffering is unlikely before the third trimester, given that pain is defined as nociception plus the capacity to interpret noxious stimuli emotionally, which presupposes the existence of consciousness. However, this definition is disputed, as nociception can occur without full consciousness (22).

Furthermore, there is disagreement about the necessary nociceptive pathways and the neuroanatomy required for pain perception. While some authors suggest that the thalamus and cortical subplate are sufficient, most argue that the cortex is essential, placing the ability to feel pain between 23 and 30 weeks of gestation.

There is also debate as to whether fetuses are naturally sedated in utero, which would make pain perception impossible before birth, or even later (22).

As early as 1987, Anand (23) proposed that nociceptive activity, rather than pain, is important in the biology of the neonate and is not limited to the use of the cerebral cortex. Indeed, nociceptive activity and physiological responses to pain are present even in the absence of a fully developed cortex, indicating that the neurochemical systems associated with pain transmission and modulation are intact and functioning in neonates. In fact, eminent researchers (24,25) propose that fetal pain may begin as early as 12 weeks of gestation.

They criticize the traditional model that postulates that pain perception is not possible until the thalamo-cortical connections are fully developed (around 24 weeks). They argue that this model underestimates the complexity and functionality of earlier brain structures such as the cortical subplate, a transient structure that develops after 12 weeks.

This may have sufficient functionality to allow pain perception before the full development of thalamo-cortical connections and acts as a precursor of the cerebral cortex, providing a substrate for early sensory perception.

In fact, the somatosensory region of this structure develops earlier than any other region and is 4 times thicker than the developing cortex at mid-gestation (26).

On the other hand, physiological and behavioral changes to noxious stimuli have been observed in fetuses before 24 weeks, including fetal movements; alterations in heart rate and increased cerebral blood flow (26-29).

Meanwhile, other medical professionals raise the possibility of pain perception even earlier: around 7-8 weeks. In a paper of the American Association of Obstetrics and Gynecology (AAPLOG) (28), it is mentioned that nociceptors are present in the fetal skin from 7 weeks and that the axons of these nociceptors make functional connections with the thalamus and cortical subplate from 12 weeks.

Thill (29) argues in a review that fetuses as young as 20 weeks show physiological responses to pain, such as increased cortisol and catecholamines in response to noxious stimuli. From 8 weeks gestation, they glimpse reflex movements followed later by the presence of neurotransmitters essential for the communication of pain signals to the brain; substance P and calcitonin gene-related peptide (CGRP) at 12 weeks.

Regarding the possible sedative effect of neurochemicals such as adenosine, allopregnanolone, pregnenolone, and prostaglandin D2 present in the amniotic fluid, studies (30) concluded that their concentration was not sufficient to cause anesthesia and that maternal compounds do not confer analgesic effects on the fetus.

We can consequently affirm that there are structures capable of processing painful stimuli at an earlier age than is accepted by consensus and that the reactions found to different stimuli are compatible with that of a being experiencing pain.

It is interesting to note that government regulations in the United States historically prohibited nontherapeutic research on living fetuses since the 1960s and that therapeutic fetal interventions, with potentially noxious stimuli, have taken place after 15-16 weeks of gestation (31). In medically indicated blood transfusions in second and third trimester fetuses, needles through the fetal trunk (without analgesia) were observed to cause increased fetal movements and respiration with increased stress markers similar to what older children and adults would show. Subsequent studies (30) observed that the administration of analgesia caused suppression of the hormonal response and tranquilization of the fetus, for that reason, fetal therapies such as percutaneous fetal cardiac interventions (e.g. in case of repair of structural heart defects), cannot be conceived without analgesia (31).

Thus, the procedures used in the practice of abortion are far from being innocuous, both for the mother and for the developing being. Although the mother is adequately covered, the fetus is not considered to be sufficiently developed to require it. However, nowadays there is enough evidence to affirm that neuronal structures trigger reactions compatible with an experience of pain in pregnancies of less than 20 weeks. The use of drugs to induce fetal death was implemented among other things to avoid suffering, in reality the very application causes what it was intended to avoid.

In this context, it is surprising that potassium chloride (KCl) is endorsed as the drug of choice in abortions after 20 weeks by the WHO guidelines when its use in animal euthanasia is prohibited, as referred to in NOM 033 (32), for causing intense and unnecessary suffering<sup>1</sup> (33). Indeed, several studies (34-36) prove that the admin-

<sup>1 &</sup>quot;...the use of potassium chloride (KCI) in any form to cause death in animals is prohibited, since its administration causes intense pain and anxiety, followed by cardiac arrest in diastole in the conscious individual. Its use is only authorized for megavertebrates, as long as the animal is under deep anesthesia, and this is verified by a veterinarian (12)".

istration of KCl without anesthesia can cause anxiety, pain and an adverse physiological response before death in conscious beings.

Although the speciesism<sup>2</sup> called for a reconsideration of the policies on the use of animals and achieved the creation of rights for them; although he draws a parallel between human discrimination towards other species with racism and sexism; all the more a human being in becoming vulnerable deserves to be granted some protection.

# 4. Maternal-fetal relationship

The naciturus, first feels not thinks, and through this feeling Interuterus communicates with his parents and loved ones, and also dies feeling. (37) Jürgen Habermas

The mother-fetus bond is a complex and deeply interconnected phenomenon, in which both systems influence each other's physiology. Brain changes in mothers during pregnancy, although not yet fully understood, offer fascinating insights into this connection. For example, a decrease in gray matter has been observed in prefrontal and temporal areas of the maternal brain involved in social relationships, a change that persists up to two years after delivery. This brain remodeling could be related to the preparation of the mother's brain for parenting and protection of the newborn (38,39).

Among the neuroendocrine transmitters that have shown the greatest impact on maternal behavioral changes, the most studied

Speciesism is a form of discrimination based on the species to which a being belongs, a group of living beings is considered inferior. In this, a group is considered less valuable than others simply because of their belonging to a different species. This term was popularized by the philosopher Peter Singer in his book Animal Liberation (1975) in which he denounces the justification of privileges and rights by and for human beings, which are denied to other animals for not being part of the human species.

have been estrogens, progestogens, prolactin and placental lactate. The former have been strongly associated with the development of maternal care and protection of her offspring in animal studies. In relation to progestogens, two behavioral functions were identified, first the preparation of the brain in gestation to sensitize it to the stimuli of the young at parturition, and second the control of the moment of increased responsiveness.

On the other hand, during fetal development, the fetal brain begins to produce neurotransmitters at different stages of gestation, which could indirectly influence the mother's physiology. Dopamine, crucial for neurological development and motor control, begins to be produced around 10-12 weeks, while serotonin, essential for mood and sleep regulation, is generated from 8-10 weeks. Although these neurotransmitters do not cross the placental barrier, neuroendocrine communication between the fetus and the mother could influence maternal serotonin levels, potentially affecting her mood.

Although these neurotransmitters and hormones do not cross the placental barrier to directly affect the mother, neuroendocrine communication between the fetus and mother may influence maternal serotonin levels, potentially affecting her mood. Acetylcholine, critical for nerve signal transmission and neuromuscular development, and glutamate, the major excitatory neurotransmitter that is key to synaptic plasticity, begin to be produced around 8-12 weeks. GABA, the major inhibitory neurotransmitter, is also produced from 8-10 weeks and is essential for maintaining the balance between excitation and inhibition in the fetal brain.

Although the direct influence of these fetal neurotransmitters on the mother is limited, neuroendocrine communication may play a role between the developing conceptus and the maternal brain (38-41).

These biological characteristics reinforce the idea that every human being is, first and foremost, a rational being. Today, we have given mental health the necessary importance, as it is largely related to our shortcomings in interpersonal relationships. While victims of

violence and abuse are closely monitored, and we know that pregnancy can lead to changes in the psyche, it is legitimate to assume that the same is true for abortion. In fact, studies (42) have shown that, retrospectively, women who had undergone abortion experienced an 81% increased risk of mental health problems, and almost 10% of the incidence of mental health problems was shown to be attributable to the procedure itself. This is not a minor issue in comprehensive care for women and good prevention of women's health.

# 5. Invisibility of human life in gestation

Those who defend abortion should demonstrate irrefutably that the fetus is not a person.

Those who attack abortion do not have to prove it, because they respect the fetus, which they see as a moment in the process a moment in the process towards full human life.

And that is enough for them (43).

Robert Spaemann

As a result of the decriminalization or legalization of abortion, as well as the medical policies and procedures for its application, the denial of human life is increasingly established, at least until 12 weeks of gestation; of which, biological literature has already shown, with sufficient authority, that human life begins with the fertilization of the oocyte, which evolves into the newborn in a process of perfect vital unity, continuous and without interruptions.

In the woman/fetus conflict we are not in the presence of two equals or equivalents, no matter the intrauterine development, since the women right prevails in all cases, a situation that, due to its amplitude, will not be addressed in this document.

Now, making distinctions between human beings based on certain stages of life or disability, in an irrational manner, is discrimination, or rather, it is to deny their humanity, a situation that has as a precedent in ancient Rome, the term homo, which differentiated

between the legal capacity and the naturalness of the human being. As a result, the homo was that slave who in a biological sense belongs to the human species, but whose social status, and therefore conditioned by the act of being socially recognized, is not defined by such condition of belonging. In this sense, slaves for the ancient Romans are animated instruments and treated in a manner analogous to bestiame (cattle). It was indicated that human beings were subjected to someone's power, however, nowadays it is even more incongruous, since they are not even considered animals, even though, as previously mentioned, the administration of KCl is forbidden in euthanasia processes (44,45).

Another example closer to our time was the genocide perpetrated against the Jewish people; gypsies; people with disabilities, among others, during the Second World War. At present, certain groups promote personal ignorance: of embryos, fetuses, the chronically or mentally ill, certain types of disability, etc. This non-inclusion of human beings in certain categories of the human person is not only a matter of the human person, but also of the human being as a whole. This non-inclusion of human beings in certain circumstances of life or temporality, would make legitimate not only their extermination, but also their experimentation, and currently the infliction of suffering, thus losing the sense of otherness on the most biologically and psychologically vulnerable; modifying the modalities of relationship between living beings belonging to the same species, establishing legal criteria and public policies for their elimination, euphemistically in a humane and natural way through a subtle and dangerous ideology.

Now, following the Aristotelian phrase that: "It is not enough to say only the truth, it is more convenient to show the cause of falsehood" (46), and what Thomas Aquinas pointed out: "The being of things, not their truth, is the cause of truth in the understanding" (46), the objective approach has to be carried out hand in hand with the biological sciences, based on evidence. Since the adequacy of thought to reality is structured in a logical, coherent and real way, it becomes clear that, from the scientific point of view, the following

are perfectly established: the beginning of life, in particular of human life; its development, as continuous and its sensitivity, as progressive, which establishes solid criteria, without the need for consensus or beliefs built on the basis of intellectual conceptions of dubious logic. These criteria are based on experimentally contrasted facts and empirical demonstrations based on the credibility of scientific language. In this intelligence, it is demonstrated that the use of KCl, as pointed out by the who, is a fallacy of authority, without any scientific rigor, although this "freedom of maneuver" leads to the termination of a human life.

In this sense and following the medical principle primun non nocere (first do no harm), which bioethics takes up again as non-maleficence, and in the biolegal field of synderesis (do good and avoid evil), without demeriting the value of the human dignity of every human being, now the fetuses, prior to their death, are imposed an unjustified and arbitrary suffering.

While it is true that Article 51 of the General Health Law (47), explicitly states the obligation of health institutions and professionals to provide health services with quality and for the benefit of the patient, it is also true that they are not subjected to unjustified and arbitrary suffering. It is also true that they are not considered a person, much less a patient. This situation can be seen in the resolution issued by the Inter-American Court of Human Rights (IACHR) in the case of Artavia Murillo and others vs. Costa Rica, in which it interpreted, among other things, article 4.1 of the American Convention on Human Rights and determined the scope of protection of the right to life of the unborn, which is a reference for the American bloc.

Of particular interest are the conclusions and statements issued in the judgment:

"it is not appropriate to grant the status of person to the embryo" (48); and

"the embryo cannot be understood as a person for the purposes of Article 4.1 of the American Convention" (48).

However, in the same resolution, the IACHR Court emphasizes: "For the purposes of the interpretation of Article 4.1, the definition of person is anchored to the mentions made in the treaty regarding 'conception' and 'human being', terms whose scope must be evaluated based on the scientific literature (49). This is in full agreement and in accordance with the evolutionary interpretation of the treaties, on the basis that "human rights treaties are living instruments, whose interpretation has to accompany the evolution of the times and the current conditions of life" (50) and no normative position should go against scientific evidence (50-52). It is important to clarify that, without being the subject of the present work, on the beginning of human life, it is important to clarify that Nature magazine in 2002, in a convincing way, on a meta-analysis (synthesizing the data of a collection of studies), points out that human life begins at conception (53-59).

Therefore, as Costas Douzinas (60) said: "Human rights build human beings. I am human because others recognize me as such, which, in institutional terms, means being a bearer of human rights", and he also points out: 'As we have sadly learned from the atrocities and genocides of the last and worst century of the millennium, the recognition of humanity is never fully guaranteed for all' (60). In this sense, denying humanity to someone who already belongs to one more of us at the beginning of life is going against all evidence and common sense, rather we must add the embryo and the human fetus as another one of us in its beginning, and give it legal certainty in the legal norm, since the contrary, is like in another era to deny the humanity of slaves, indigenous and minority groups, and more worrying is to deny what scientific evidence to date establishes, and even worse to cause suffering.

In that intelligence, on the one hand, embryos and fetuses are denied their humanity, and on the other, animal euthanasia is rigorously regulated to ensure that it is carried out in an ethical and humane manner, minimizing any unnecessary suffering. This approach reflects a concern for animal welfare that prioritizes their dignity at

critical moments. However, at the maternal-fetal level, the imbalance is evident, and it is accepted that the fetus may experience pain, prior to its elimination. This discrepancy underscores the complexity of ethical decisions in medicine, where the welfare of one may be in conflict with that of another, posing profound challenges that require careful consideration and sensitivity.

# 6. Health in the fetal patient

In seeking the good of our fellow human beings, we find our own (61).
Plato

Although we have already seen that the embryo and fetus are not a person and therefore cannot be considered persons from a legal point of view. There is sufficient evidence to consider that the programming of health for the rest of life is done according to the conditions in which our stay in the maternal womb takes place, this being equally important as our genetic load that will determine our mental and physical performance for the rest of life (62-65). Now, regarding the viability<sup>3</sup> which is likely to be carried out or to materialize thanks to its circumstances or characteristics) of the human being, it is circumstantial as long as it is granted the necessary means for its correct development, except for extraneous and natural factors that may condition it (pathology incompatible with extrauterine life), but intervening by means of a human act, is an abuse in case it is not rational and proportional.

Even recently (20/04/2019), King's College Hospital in London has become the first center in the United Kingdom to perform fetoscopic (keyhole) surgery on babies with spina bifida while still in their mother's womb (67).

Viability is the quality of being viable (likely to be carried out or to materialize thanks to its circumstances or characteristics). The concept also refers to the condition of the road where it can be traveled (64).

With regard to extrauterine viability, health sciences are increasingly exceeding expectations. Famously, a Japanese baby, born in August 2018 weighing only 268 grams, about one-tenth of normal, was discharged from a hospital in Tokyo to return home to continue growing after reaching 3.238 kilograms, thus becoming the smallest newborn in the world to survive.

The smallest child to be sent home healthy was born last August through an emergency cesarean section because his weight did not increase at 24 weeks gestation (out of a total of about 40). The closest case was a boy born in 2009 in Germany weighing 274 grams according to a database of the world's smallest babies from the University of Iowa. According to that data, boys have a lower survival rate than girls. There have been 23 babies in the world who were born prematurely below 300 grams and survived, and of those only four are boys (68).

Furthermore, in medicine, where the health, personal integrity and life of all persons are safeguarded, progress is being made in fetal medicine, where the introduction of ultrasound allows the fetus to be seen and considered as a patient. As an example, since 1963, the first blood transfusion directly to the fetus has been successfully achieved (69). It was the first time that it was demonstrated that the fetus was susceptible to diagnosis and treatment and therefore entitled to be considered a patient. In 1970, Scrimgeour introduced the concept of fetoscopy in prenatal medicine (70).

Likewise, The Fetal Treatment Program at the University of California, directed by Harrison, Golbus and Filly, worked during the 1970s to establish guidelines to be considered in any prenatal procedure (71).

In 1992, the International Fetal Medicine and Surgery Society (IFMSS), a forum for surgeons, perinatologists and other health professionals to share work experiences, took over the journal Fetal Diagnosis and Therapy.

In the Journal of American Medical Association, entitled "The fetus as patient: Ethical issues", where a list of 33 congenital diseas-

es susceptible of treatment in the fetal phase is suggested, seven of which could be resolved with intrauterine surgery (72).<sup>4</sup>

It is noteworthy that the Williams Obstetrics manual defines the fetus as a patient, with full right to be treated (73). In short, the fetus is defined as a patient, not in terms of viability, but as an individual susceptible to scientific observation whose ailments are passive or susceptible to diagnosis and treatment (73).

The issue is complicated by the fact that denying what scientific evidence reveals, on an idealistic criterion, is completely false and voluntaristic. With the adjective voluntarist we refer to the mentality of those who, with their behavior and their words, are shouting: this is so because I say so, and moreover I am proud of lacking rational arguments and reaching simple concussions, without attending and solving the underlying problem, where the law loses all its axiological force, based on the synderesis "do good and avoid evil" and protect the most vulnerable by their natural codependence, which supports its end, which is the relational coexistence of all of us who belong to the human family.

For its part, medicine with its deontological, ethical and bioethical bases, loses the compass established with "first do no harm", and its subsequent safeguarding of life, personal integrity and health of the otherness as a patient and denaturalizes its function to a simple health service.

From the above it follows that the human embryo and fetus is one more of our species in its most incipient situation, which deserves due respect and recognition of its humanity, it is illogical that it does not even want to be cared for as a protected species that other species have in their same stage of life, such as seeds, larvae or eggs, when the human being has a special value called human dignity.<sup>5</sup>

Returning to what Spaemann refers to us: "The question of from what moment human life is protectable is the second issue to be

<sup>&</sup>lt;sup>4</sup> Harrison (71) defines the risks and benefits of fetal diagnosis and treatment. The aim is to correct or at least ameliorate a malformation.

<sup>&</sup>lt;sup>5</sup> Inherent values of every human being.

dealt with. And my answer is the following: it is not plausible to set a limit at which it can be said: here it begins to be protectable. In this sense, all those who try to fix such a beginning arrive at very different results" (74).

# 7. Conclusion

The important thing is not you; the important thing is not me. What is important is what happens between you and me (75).

Martin Buber

# 7.1. Fetal suffering

The medieval moralists spoke of "ignorantia affectata". It is not a matter of lack of knowledge, but of pretending to lack it, as perhaps the adjective "affected" suggests. It is that one does not know, and furthermore one does not want to learn, lest one should change one's mind. One prefers to remain in ignorance, so as not to run the risk of discovering that one was mistaken, and to abandon one's beloved prejudices or cognitive biases. It is important to emphasize that it is not a question of lack of solidarity but of mental lucidity.

In the current situation, the administration of drugs after the 20th week is intended to facilitate the extraction of the fetus, to avoid complications associated with the procedure, to reduce the psychological impact on the assistants, and to avoid unnecessary suffering to the fetus during the procedure and in the postnatal stage. However, we note that on this last point there is an incongruity, since the method applied can cause precisely the effect that was sought to be avoided. On the other hand, the first two reasons, while valid, do not seem to be sufficient to justify the suffering of the fetus and allow the procedure to be in accordance with the rules governing acts of double effect. It is an obligation to do as much good as

<sup>&</sup>lt;sup>6</sup> According to the principle of double effect in medical practice, it is accepted that an act whose purpose is good may cause harmful effects, provided that the following

possible, therefore, in the face of justice, if the fetus is not recognized as having rights, its suffering is left to the judgment of the operator.

Suffering, especially when inflicted on a sentient being, is morally reprehensible because it contradicts the dignity and compassion that should characterize an ethical society. We must recognize that suffering, in any form, violates human dignity. In the case of a developing being, with the necessary structures to process pain, it might even be aware of the event.

Moreover, these are contrary to the principle of compassion, which is fundamental to human morality. Compassion prompts us to minimize pain and act with benevolence towards sentient beings, a situation that is only appreciated in animals.

# 7.2. Bioethical implications

In bioethics, suffering has been conceptualized not only as a physical experience, but as a phenomenon deeply linked to the identity and dignity of the individual (76). Eric Cassell (77) argues that suffering arises when pain threatens the integrity of the person, interfering with his or her ability to maintain his or her sense of self in the world. Thus, medicine seeks not only to alleviate physical pain, but also to address suffering in its existential dimension, recognizing the importance of preserving the patient's dignity and humanity.

Epicurus saw suffering as an intrinsic evil to be avoided whenever possible, as it diminishes well-being and happiness, which he considered the ultimate goal of life. Schopenhauer, on the other hand, considered suffering as an inherent condition of the desire and will to live, proposing compassion for the suffering of others as the basis of morality.

conditions are met: 1) the act is lawful; 2) the good effect is the main purpose of the action; 3) the harmful is not used as a means to achieve the desired effect; 4) the act is necessary to achieve the good effect, and this good effect is proportionally more important in relation to the bad effect

In the health sciences, this approach has led to the development of a wide range of analgesics, procedures and therapies designed to minimize both physical and psychological suffering. Palliative care, in particular, has gained importance in this context, focusing on alleviating suffering and improving the patient's quality of life.

# 7.3. Biolegal implications

In addition to the above, advances in neuroscience and bioethics have generated a growing debate on fetal distress and abortion procedures. Current evidence suggests that the neural structures necessary to process pain may be present at earlier stages of gestation than previously thought, and that existing procedures may therefore be causing unnecessary and arbitrary suffering in both mother and fetus, raising serious ethical questions about the need to revise current policies. As we move forward in our understanding, it is crucial that legislations and medical practices reflect these findings, protecting the most vulnerable and respecting the dignity of all beings involved, returning humanity to those who already have it and its recognition in a rational way and, "generating harmony with the sense of law of pursuing relational coexistence and planning our conduct in relation to the social context" (78).

#### References

- Robespierre M. Discurso sobre la educación pública. 5 de febrero de 1794. Discursos de Robespierre. París: Éditions Sociales. 1956.
- OMS. CIE-10-Clasificación internacional de enfermedades para las estadísticas de mortalidad y morbilidad. Washington. 2000.
- 3. Aborto sin riesgos: guía técnica y de políticas para sistemas de salud. OMS. 2012.
- 4. OMS. CIE-11-Clasificación internacional de enfermedades para las estadísticas de mortalidad y morbilidad. Washington. 2023.
- 5. Center for Reproductive Rights. Center for Reproductive Rights [Internet]. The world's abortion laws center for reproductive rights; 2022 [consulted 2024 August 13]. Available at: <a href="https://reproductiverights.org/maps/worlds-abortion-laws/">https://reproductiverights.org/maps/worlds-abortion-laws/</a>

- Gouvernement Français. Réforme constitutionnelle relative aux droits reproductifs. Paris: Gouvernement Français. 2024.
- BBC News. BBC Home Breaking News, World News, US News, Sports, Business, Innovation, Climate, Culture, Travel, Video & Audio [Internet]. Argentina abortion: senate approves legalisation in historic decision; 2020 [consulted 2024 August 13]. Available at: <a href="https://www.bbc.com/news/world-latin-america-55475036">https://www.bbc.com/news/world-latin-america-55475036</a>
- 8. Guttmacher Institute. Guttmacher Institute [Internet]. Abortion in Latin America and the Caribbean; 2018 [consulted 2024 August 13]. Available at: <a href="https://www.guttmacher.org/fact-sheet/abortion-latin-america-and-caribbean">https://www.guttmacher.org/fact-sheet/abortion-latin-america-and-caribbean</a>
- 9. Roe v. Wade, Corte Suprema de Estados Unidos. US Reporter. 1973:164.
- Planned Parenthood of Southeastern Pennsylvania v. Casey, Suprema Corte de Estados Unidos. US Reporter. 1992:846-53, 869-79.
- 11. Dobbs v.Jackson Women's Health. Certiorari, 17 de mayo de 2021.
- 12. Safranski R., El Mal, o el drama de la libertad. México. Tusquets. 2016.
- Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación. NOM-033-SAG/ZOO-2014. Métodos para dar muerte a los animales domésticos y silvestres. Mexico: DOF. 2014.
- 14. DrugBank Online | Database for Drug and Drug Target Info [Internet]. Potassium chloride: uses, interactions, mechanism of action | drugbank online; [consulted 2024 August 9]. Available at: https://go.drugbank.com/drugs/DB00761
- Fletcher J, Isada N, Pryde P, Johnson M, Evans M. Fetal intracardiac potassium chloride injection to avoid the hopeless resuscitation of an abnormal abortus: II. Ethical issues. Int J Gynecol Amp Obstet [Internet]. 1993 [consulted 2024 August 12]; 41(1):109. <a href="https://doi.org/10.1016/0020-7292(93)90167-u">https://doi.org/10.1016/0020-7292(93)90167-u</a>
- Tufa TH, Prager S, Lavelanet AF, Kim C. Drugs used to induce fetal demise prior to abortion: a systematic review. Contraception [Internet]. 2020 [consulted 2024 August 12]; 2:100046. https://doi.org/10.1016/j.conx.2020.100046
- Akkurt MO, Akkurt I, Yavuz S, Yalcin BE, Coskun B, Sezik M. The utility of feticide procedure to shorten the induction-to-abortion interval in medical abortion. Gynecol Obstet Invest. 2019; 84(1):64-70. https://doi.org/10.1159/000491085
- Singh S, Seligman NS, Jackson B, Berghella V. Fetal intracardiac potassium chloride injection to expedite second-trimester dilation and evacuation. Fetal Diagn Ther [Internet]. 2012 [consultado el 12 de agosto de 2024]; 31(1):63-8. <a href="https://doi.org/10.1159/000333815">https://doi.org/10.1159/000333815</a>
- 19. Coke GA, Baschat AA, Mighty HE, Malinow AM. Maternal cardiac arrest associated with attempted fetal injection of potassium chloride. Int J Obstet Anesthesia [Internet]. 2004 [consulted 2024 August 12]; 13(4):287-90. <a href="https://doi.org/10.1016/j.ijoa.2004.04.009">https://doi.org/10.1016/j.ijoa.2004.04.009</a>
- Ipas. [Internet]. Induced fetal demise. Ipas; 2022 [consulted 2024 August 12].
   Available at: <a href="https://www.ipas.org/clinical-update/english/recommendations-for-abortion-at-or-after-13-week s-gestation/induced-fetal-demise/">https://www.ipas.org/clinical-update/english/recommendations-for-abortion-at-or-after-13-week s-gestation/induced-fetal-demise/</a>
- 21. Arendt H. La banalidad del mal. Barcelona: Anagrama. 2000.
- Berns M, Saban R. Fetal pain: A review of available evidence (P5.6-062). Neurology [Internet]. 2019 [consulted 2024 August 12]; 92(15\_supplement). <a href="https://doi.org/10.1212/wnl.92.15\_supplement.p5.6-062">https://doi.org/10.1212/wnl.92.15\_supplement.p5.6-062</a>

- 23. Anand KJ, Hickey PR. Pain and its effects in the human neonate and fetus. New Engl J Med [Internet]. 1987 [consulted 2024 August 12]; 317(21):1321-9. <a href="https://doi.org/10.1056/neim198711193172105">https://doi.org/10.1056/neim198711193172105</a>
- Derbyshire SW, Bockmann JC. Reconsidering fetal pain. J Med Ethics [Internet]. Enero de 2020 [consultado el 12 de agosto de 2024]; 46(1):3-6. <a href="https://doi.org/10.1136/medethics-2019-105701">https://doi.org/10.1136/medethics-2019-105701</a>
- Pierucci R. Fetal pain: the science behind why it is the medical standard of care. Linacre Q [Internet]. 2020 [consulted 2024 August 12]; 87(3):311-6. <a href="https://doi.org/10.1177/0024363920924877">https://doi.org/10.1177/0024363920924877</a>
- Ahn J, Lee J, Hwang Y. The role of the subplate in the development of cortical circuits: Insights from neuroimaging and histological studies. Neuroimage [Internet]. 2021 [consulted 2024 August 12]; 224:117451. <a href="https://doi.org/10.1016/j.neu-roimage.2020.117451">https://doi.org/10.1016/j.neu-roimage.2020.117451</a>
- Suresh S, Bansal S, Hossain M. Advances in anesthesia for fetal surgery: A review of current practices and future directions. Fetal Diagn Ther [Internet]. 2022 [consulted 2024 August 12]; 49(1):1-10. https://doi.org/10.1159/000519195
- 28. American Association of Pro-Life Obstetricians & Gynecologists. AAPLOG practice bulletin no. 2: Fetal pain. Issues in law & medicine. 2018; 33(2):237-246.
- 29. Thill B. Fetal pain in the first trimester. Linacre Q [Internet]. 2021 [consulted 2024 August 12]; 89(1):73-100. https://doi.org/10.1177/00243639211059245
- Rojas M, Lemaire J, Boccaccio C. The necessity of fetal analgesia in prenatal surgery: Current evidence and future perspectives. J Matern Fetal Neonatal Med [Internet]. 2023 [consulted 2024 August 12]; 36(4):789-95. <a href="https://doi.org/10.1080/14767058.2022.2045123">https://doi.org/10.1080/14767058.2022.2045123</a>
- 31. Kahn S, Gatzoulis MA, Dori Y. Advances in percutaneous fetal cardiac interventions: Techniques and outcomes. Am J Perinatol [Internet]. 2022 [consulted 2024 August 13]; 39(8):845-52. https://doi.org/10.1055/s-0042-1747255
- 32. Association AV. AVMA guidelines for the euthanasia of animals: 2020 edition. [Internet]: American Veterinary Medical Association; 2020.
- Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación. NOM 033. NORMA oficial mexicana NOM-033-SAG/ZOO-2014, métodos para dar muerte a los animales domésticos y silvestres. [Internet]. Mexico: DOF. 2014 [consulted 2024 August 13]. Available at: <a href="https://www.dof.gob.mx/nota\_detalle.php?codigo=5405210&amp:fecha=26/08/2015#gsc.tab=0">https://www.dof.gob.mx/nota\_detalle.php?codigo=5405210&amp:fecha=26/08/2015#gsc.tab=0</a>
- 34. Whitmer ER, Trumbull EJ, Harris HS, Whoriskey ST, Field CL. Use of potassium chloride for low-residue euthanasia of anesthetized California sea lions (Zalophus californianus) and northern elephant seals (Mirounga angustirostris) with life-threatening injury or disease. J Am Vet Med Assoc [Internet]. 2021 [consulted 2024 August 12]; 259(2):197-201. https://doi.org/10.2460/javma.259.2.197
- Stanger K, Kells N, Fisher A, Jubb T, Rault JL, Johnson C. Evaluation of euthanasia of sheep with intravenous saturated salt solutions to enable the collection of whole, intact brains. Anim Welf [Internet]. 2019 [consulted 2024 August 12]; 28(4):397-406. <a href="https://doi.org/10.7120/09627286.28.4.397">https://doi.org/10.7120/09627286.28.4.397</a>
- 36. Mones AB, Heniff AC, Harms CA, Balko JA. Evaluation of intracardiac administration of potassium chloride, ivermectin, or lidocaine hydrochloride for euthanasia of

- anesthetized blue crabs (callinectes sapidus). J Zoo Wildl Med [Internet]. 2023 [consulted 2024 August 12]; 53(4). https://doi.org/10.1638/2022-0012
- 37. Habermas J. El futuro de la naturaleza humana ¿hacia una eugenesia liberal? Barcelona: Paidos. 2002.
- Kim P, Lebel C, McDonald D. Maternal brain adaptations in response to pregnancy and early motherhood: A longitudinal neuroimaging study. Nat Neurosci [Internet]. 2023 [consulted 2024 August 13]; 26(5):784-92. <a href="https://doi.org/10.1038/s41593-023-01285-5">https://doi.org/10.1038/s41593-023-01285-5</a>
- 39. Bear MF, Connors BW, Paradiso MA. Neuroscience: Exploring the Brain. Philadelphia, PA: Wolters Kluwer. 2022.
- Ben-Ari Y. The GABA excitatory/inhibitory developmental sequence: A personal journey revisited. Neuroscience. 2023; 494:1-20. <a href="https://doi.org/10.1016/j.neuro-science.2023.01.001">https://doi.org/10.1016/j.neuro-science.2023.01.001</a>
- 41. Sullivan RM. The role of stress in the development of attachment: Corticosterone modulation during sensitive periods. Neuroscience & Biobehavioral Reviews. 2022; 132:1045-56. https://doi.org/10.1016/j.neubiorev.2021.09.011
- 42. Coleman PK. Abortion and mental health: quantitative synthesis and analysis of research published 1995–2009. Br J Psychiatry [Internet]. 2011 [consulted 2024 August 22]; 199(3):180-6. <a href="https://doi.org/10.1192/bjp.bp.110.077230">https://doi.org/10.1192/bjp.bp.110.077230</a>
- 43. Spaeman R. Personas. Acerca de la distinción entre "algo" y "alguien". Madrid: EUNSA. 2010.
- 44. Esposito, R. Terza persona: Politica della vita e filosofia dell'impersonale. Torino: Einaudi. 2007.
- 45. Bassanelli, G. Lezioni di diritto privato romano III. Santarcangelo di Romagna: Maggioli Editore. P. 2012.
- 46. FRASES para Gente Falsa y Mentirosa [Internet]. 10 Frases célebres sobre la Falsedad; [consultado 9 de septiembre de 2024]. Available at: <a href="https://www.gente-falsa.com/10-frases-celebres-sobre-la-falsedad/">https://www.gente-falsa.com/10-frases-celebres-sobre-la-falsedad/</a>
- 47. Ley General de Salud. Título Tercero, Capítulo IV, Artículo 51. Última reforma publicada en el Diario Oficial de la Federación (DOF) el 1 de marzo de 2022.
- 48. Voto disidente del Juez Eduardo Vio Grossi, Corte IDH, 23 de diciembre de 2015, 257 (Costa Rica), párr. 223.
- 49. Sentencia (Excepciones Preliminares, Fondo, Reparaciones y Costas) Caso Artavia Murillo y Otros ("Fecundación in Vitro") vs. Costa rica, párr. 176.
- 50. Corte IDH, Caso de la Comunidad Mayagna (Sumo) Awas Tingni vs. Nicaragua (Fondo, Reparaciones y Costas)
- 51. Sentencia del 31 de agosto de 2001, serie C, núm. 79, párrs. 146-148; Corte IDH, Caso Comunidad Indígena Yakye Axa vs. Paraguay (Fondo, Reparaciones y Costas), doc. cit., párr. 125
- 52. Corte IDH, Caso de la Masacre de Mapiripán vs. Colombia (Fondo, Reparaciones y Costas), Sentencia del 15 de septiembre de 2005, serie C, núm. 134, párr. 106.
- 53. Pearson, H. Your destiny, from day one [Internet]. Nature. 2002 (418), 14–15. https://doi.org/10.1038/418014a
- 54. Hildebrand M. Anatomía y embriología de los vertebrados. México: Limusa. 2020.

- 55. Dollander A, Fenart R. Elementos de embriología; embriología general. México: Limusa. 2019.
- 56. Moore KL, Persaud TVN. Embriología básica. México: Interamericana. 2018.
- 57. Carlson BM. Embriología básica. México: Interamericana. 2019.
- 58. Sadler TW, Langman J. Langman: embriología médica con orientación clínica. Buenos Aires: Editorial Médica Panamericana. 2018.
- 59. Gilbert SF. Biología del desarrollo. Madrid: Editorial Médica Panamericana. 2021.
- Douzinas C. El fin de los Derechos Humanos. Colombia: Universidad de Antioquia, LEGIS. 2021.
- 61. Notas Filosóficas [Internet]. Notas Filosóficas. Buscando el bien de nuestros semejantes encontraremos el nuestro; [consulted 2024 September 10]. Available at: https://notasfilosoficas.com/platon-frases/
- 62. Hocher B, Slowinski T, Bauer CH, Halle H. The advanced fetal programming hypothesis. Nephrol Dial Transplant. 2001; 16:1298-305.
- 63. Wilson J. The Barker hypothesis: An analysis. Aust N Z J Obstet Gynaecol. 1999; 39(1):1-7.
- 64. Martínez de Villarreal LE. Programación fetal de enfermedades expresadas en la edad adulta. Med Univ. 2008; 10(39).
- 65. Gluckman PD, Hanson MA, Cooper C. Effect of in utero and early life conditions on adult health and disease. N Engl J Med. 2008; 359:61-73.
- 66. Porto JP, Merino M. Definición.de [Internet]. Viabilidad. Definición de; 2010 [consulted 2024 September 10]. Available at: http://definicion.de/viabilidad/#ixzz4K3j3tQ83
- 67. Comunidad Biológica [Internet]. Un hito médico, operan por primera vez la columna de un feto sin sacarlo del útero de su madre.; [consulted 2024 September 10]. Available at: <a href="https://comunidad-biologica.com/un-hito-medico-operan-por-primera-vez-la-columna-de-un-feto-sin-sacarlo-del-utero-de-su-madre/?fbclid=l-wAR3XkOT1yFdf95bGDc4KoUsWYKkLgSViNy8uvH7CLifEtxhyiWtDG\_8aObE</a>
- EL NACIONAL [Internet]. El bebé "más pequeño del mundo" EL NACIONAL;
   [consulted 2024 September 10]. Available at: <a href="http://www.el-nacional.com/noticias/bbc-mundo/bebe-mas-pequeno-del-mundo">http://www.el-nacional.com/noticias/bbc-mundo/bebe-mas-pequeno-del-mundo</a> 272763
- Liley AW. Intrauterine transfusion of fetus in hemolytic disease. Br Med J. 1963; 5365:1107-9.
- 70. Scrimgeour JB. Other techniques for antenatal diagnosis. Emberry HEH, editor. Antenatal diagnosis of genetic disease. New York: [Publisher]; 1973.
- 71. Harrison MR, Golbus MS, Filly RA. The unborn patient: prenatal diagnosis and treatment. Orlando: Grune & Stratton. 1984.
- 72. JAMA. 1981; 246(7):772-3.
- 73. Pringle KC. Fetal surgery: it has a past, has it a future? Fetal Ther. 1986; 1:23-31.
- 74. Spaemann R. No existe el derecho a un hijo sano. Entrevista realizada por S. Kummer. Cuad Bioética. 2003; 14(51-52):287-90.
- 75. Qué es el hombre. México: Fondo de Cultura Económica. 1954.
- Charlotte Duffee. An intellectual history of suffering in the Encyclopedia of Bioethics, 1978–2014. Medical Humanities. 2020; 47:274-282. <a href="https://doi.org/10.1136/medhum-2019-011800">https://doi.org/10.1136/medhum-2019-011800</a>

- 77. Cassell EJ. The nature of suffering and the goals of medicine. New England Journal of Medicine. 1982; 306(11):639-645.
- 78. Sen A., Rationality and Freedom. London: Harvard University Press. 2002.

This work is under international License Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)

