Opinions on the Legitimacy of Death Declaration by Neurological Criteria from the Perspective of 3 Abrahamic Faiths

Nörolojik Kriterlere Bağlı Ölüm İlanının Meşruyeti Konusunda Üç İbrahimi Din Açısından Görüşler

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ABSTRACT

Traditional criteria to identify death may not fit all circumstances. This manuscript explores religious jurisprudence to ascertain whether death declaration by neurological criteria (DDNC) is accepted as a valid method by 3 Abrahamic religious traditions i.e. Islam, Judaism, and Catholicism. Among Islamic sources (order of primacy), neither the Qur'an, Sunnah as reported in Hadith, Ijma' (scholarly consensus), nor Qiyas (precedent-based analogy) clearly describe death determination criteria. Through Ijtihad (lowest level of Shari'ah), 5 of 6 identified non-binding fatwa support DDNC. Faith-based medical organizations are divided. Eleven of 13 surveyed Muslim-majority countries have laws supporting DDNC. Concern exists that premature death declaration could violate the Shari'ah concept of Hifz-An-nafs (saving life). As such, DDNC remains debated in Islamic circles. Among the 3 main sources of Jewish law (Halacha), the Torah (oral and written) does not clearly define death declaration criteria. Although Talmudic interpretations of Misnah Oholot 1:6 and Gamara Hullin 21a suggest a possible justification for death determination using neurologic criteria in some conditions, the bulk of mitzvot d'rabbanan (Rabbinic Law) rejects DDNC and adheres to cardiorespiratory criteria. Lastly, Catholic Church Cannon Law and the Holy Scripture recorded in Bible does not define death determination criteria. Following the Council of Vienne, Saint Thomas's loss of integration view has predominated. In 2000, Pope John Paul II expressed tentative and qualified support for DDNC, however the topic remains controversial. Despite dissenting opinions in each faith, DDNC is currently accepted as valid by many Muslims and Catholics, while rejected by Judaism.

Keywords: Death, brain death, islam, judaism, catholicism, medical ethics, end-of-life

ÖZ

Ölümü tanımlamak için kullanılan geleneksel kriterler bütün durumlara uymayabilir. Bu çalışma nörolojik kriterlere dayanan ölüm ilanını (DDNC) üç İbrahimi dini gelenegi göre (İslam, Yahudilik ve Katoliklik) ölüm tespiti için geçerli bir yöntem olarak uygun olduğunu tespit etmek için hukukuna araştırmaktadır. İslami kaynaklar arasında, ne Kur’an, ne Sünnet (Hadis), ne icmâ (İslam alimlerinin fikir birliği) ne de kayas (benzer hukuque göre fıkri akıl yürütmesi) ölüm tespiti için bir kriter tanımlamamaktadır. Bu çalışmada tespit edilen, Ijtihad yoluyla oluşturulan olan altı fetvadan (bağlayıcılığı bulunmayan) beşi DDNC’yi desteklemektedir. İncelenen ülkelerden DDNC’yi kabul eden inanç temelli tabii kurular birləşərindən ayrılmışdır. Arastırmən 13 Müslüman ülkelerin 11’inde DDNC yəstəkleyən yasalar vardır. Ertən ölüm bildiriminin, sərətin yaşamlı kurtarma (Hifz-An-nafs) kəavrəmını iləhə edəbilməçili qərənsizdir. Bu nedenə, DDNC İslami əsərlərdə təşəbbüs olanat yeməkdi. Üç temel Yahuhi hukuki kəavrəm (Halaka) içərisində, Tevrat (həm yazılı və sözlü olan) ölüm tespitini açık olarak tanımlamamaktadır. Misnah Oholot 1:6 və Gamara Hullin 21a Talmudi yorumlarının ölüm tespiti için nörolojik bir yöntemin bazı durumlar kəbədə edəbilərdir bu nəzərən. Mənbəyən, mənəddən tap áreasində nəzərən, az bir dərəcə kədərməsində yaranma mənəddən tap arəsənin xüsusiyyətlərinə əməliyyət, mənbəyən, mənəddən tap areasindən əlavə təşəbbus olunan alət qələmənə həyata keçirən, mənbəyən, mənəddən tap areasindən əlavə təşəbbus olunan alət qələmənə həyata keçirən. 2000-cü əsrin, Papa John Paul II DDNC üçün xəbər və nitelikli bir xəbər vermişdir. Dəyərsizləşərində, her üç inanç da DDNC’yi xəbərən fikirən olmasına rağmen DDNC birçoq Müslüman ve Katolik tarafından ölüm tespitinde geçerli bir kriterən dəkili edilən Yahuhi qəzələrinə redledilmişdir.

Anahtar keliməler: Ölüm, bəyin ölümü, İslam, Yahudilik, Katoliklik, tip etiqi, yaşam sonu

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INTRODUCTION

Traditional criteria to identify death may not fit all circumstances. Death determination by neurological criteria (DDNC) has been heavily debated in medical, legal, and religious arenas. Several religions (or sects) have rejected DDNC including: Buddhism\(^1\), Shinto\(^1\), Orthodox Judaism\(^2-4\), spiritual practices of the indigenous peoples of the America’s\(^5\), and some Muslims\(^6\). Stemming from religious objections, four U.S. states (California, Illinois, New York, New Jersey) have amended laws to accommodate religious or moral objection to DDNC\(^7-10\). This manuscript explores religious jurisprudence to ascertain whether DDNC is accepted as a valid criteria by 3 Abrahamic faith traditions: Judaism, Catholicism and Islam.

DEATH and MODERN SOCIETY

Determining Death

Modern technology has complicated death determination by obscuring traditional markers. Historically, death was determined by the irreversible cessation of cardiac or respiratory functions, a definition still utilized in many acute care settings\(^11,12\). However, sedation by obscure vital functions, and technology including mechanical ventilation, cardiac bypass, extracorporeal membrane oxygenation, ventricular assist devices and others may maintain vital physiologic functions despite irreversible central nervous system (CNS) insult, thereby introducing new levels of diagnostic uncertainty. Moreover, organ transplantation (notably heart and lung) results in a period where the patient may have neither of the specified organs, yet circulation, oxygenation, and brain perfusion and function are technologically maintained. This has pushed providers to identify or develop alternative means to recognize death’s occurrence.

Modern Medicine and Neurologic Criteria to Determine Death

DDNC was first described as irreversible coma in 1959\(^13\). By the mid-1960’s the terms cerebral death syndrome, electrocerebral silence, or electrocerebral inactivity were used to identify such patients, with electroencephalograms (EEG) showing lack of brain electrical activity >2 µV when measured between electrode pairs placed ≥10 cm apart\(^14,15\). In 1968, the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death coined the term brain death, to be determined by: total unawareness of externally applied stimuli, nonexistent spontaneous respiration, and brainstem reflexes, and a flat EEG\(^16\). In 1969, representatives of the Islam, Christianity (Catholicism and Protestantism), and Judaism achieved an inter-faith consensus that DDNC was a reasonable concept to identify death\(^14\). During this same period, many countries were passing legislation recognizing DDNC, including Finland (1971) and the U.S. (1980)\(^17,18\). Between 2013 and 2016 several controversies emerged surrounding DDNC including: (1) need for family consent to apply, (2) the third parties that bear treatment costs when treatment is continued after criteria are met, and (3) what to do in cases of pregnancy\(^19,20\). In early 2017, the U.S. State of Nevada became the first (and only) state to revise their state law to address these stipulations: as follows: (1) family consent is not required for application; (2) DDNC must be made in accordance with published guidelines; (3) treatment costs of continuing organ support after DDNC determination become the responsibility of a patient’s family; and (4) organ support must not be withheld or withdrawn from a person with DDNC if they are known to be pregnant and it is “probable that the fetus will develop to the point of live birth with continued application of organ-sustaining treatment”\(^20\).

Although DDNC has been promoted by the World Health Organization\(^21\), heterogeneity exists in guidelines, methods of determination, and local compliance\(^22-24\). In a survey of 80 nations, only 69% of them had a national standard, and only 59% of them required apnea testing\(^25\). Moreover, in opposition to guidelines, up to 40% of countries require further ancillary testing\(^26\).
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JUDALSM, JURISPRUDENCE and DEATH

Fundamentals of Jewish Jurisprudence
The term Halakha denotes the entire subject matter of the Jewish legal system. It is the collective body of Jewish religious laws derived from the written Torah (Torah she-bi-khtav), oral Torah (Torah she-be-`al peh), rabbinic law, and from long-standing customs (minhag). The Pentateuch (the five books of Moses) is the touchstone document of Jewish law. The oral Torah represents those laws, statutes, and legal interpretations (mostly civil and ceremonial) that are not recorded in the written Torah. The major repositories of the oral Torah are the Mishnah (repeating), and the Gemara (learning) which constitute analysis and commentaries concerning the Mishnah. Together, these are referred to as the Talmud (study), the preeminent text of Rabbinic Judaism. The Talmud has two versions, the Babylonian and the Palestinian (or Jerusalem).

From the 14th to 17th centuries, Jewish law underwent a period of codification. This led to the acceptance of the law code format of Rabbi (R.) which Joseph Karo (1488-1575 A.D.) called the Shulchan Aruch. Although the Shulchan Aruch generally follows Sephardic law and customs, it became generally accepted as authoritative amongst Ashkenazi Jews after R. Moshe Isserles (Kraków, Poland) supplemented it in 1571 A.D. with notes called Mapah. The Shulchan Aruch, and its predecessor the Arba’ah Turim of R. Jacob ben Asher, divided Jewish law into four areas: (1) Orah Hayyim (daily, Sabbath, and holiday laws); (2) Even Ha-Ezer (family including financial aspects); (3) Hoshen Mishpat (financial law); and Yoreh De’ah (dietary and other miscellaneous matters). Collections of responses (Responsa) to specific questions have been published for further guidance. Lastly, the rabbinical courts of Israel have published their written opinions (Piske Din) on many modern matters.

Halakha from any of these sources may be referred to as a mitzvah (commandment; plural: mitzvot). Because of this imprecise usage, sophisticated halakhic discussions are careful to identify mitzvot as being mitzvot d’oraita (from the Torah; numbered as 613) or mitzvot d’rabbanan (from the rabbis). A gezeirah is a rabbinic law instituted to prevent people from accidentally violating a mitzvot d’oraita, whereas takkanot are rabbinical laws created for public welfare that are unrelated to biblical laws and may vary between communities or regions. Lastly, minhag is treated as a category of mitzvot d’rabbanan. It is a custom that developed for worthy religious reasons and has continued long enough to become a binding religious practice. Similar to takkanot, mitzvot are binding and may vary across sects and regions.

Judaism and Neurologic Criteria to Determine Death
The Torah does not clearly define the criteria for the determination of death. However, the Hebrew word for life (nefesh) is explicitly linked to breath. The words that describe the animating spirit that defines life (neshamah and ruah) similarly relate to respiration (Genesis 2: 7,22). The first delination of death determination criteria in Halakha appears in the Babylonian Talmud (Yoma 85a) in the context of a discussion trapped persons during a building collapse on the Sabbath (Table 1). Because of the principle of pikuach nefesh (saving a life takes priority over Sabbath observance), rescue efforts should proceed until life or death is determined. The rule was codified in the Mishneh Torah (Code of Maimonides) Hilchot Shabbat (Laws of Sabbath) 2:19 as follows: “If, upon examination, no sign of breathing can be detected at the nose, the victim must be left where he is [until after the Sabbath] because he is already dead.” The Shulchan Aruch (Orach Chayim 329:4) further states:

“Even if the victim was found so severely injured that he cannot live for more than a short while, one must probe [the debris] until one reaches his nose. If one cannot detect signs of respiration at the nose, then he is certainly dead whether
the head was uncovered first or whether the feet were uncovered first.”

Neither Maimonides (aka Rambam) nor R. Karo required examination of the heart. Cessation of respiration was the determining physical sign for death ascertainment. Despite this classic Jewish legal definition that death is established when spontaneous respiration ceases, there is evidence that the presence of a pulse remains important. The Talmud maintains that heartbeat cessation can also be considered a determining factor. Renowned authority R. Tzvi Ashkenazi (Chacham Tzvi) notes that in some cases no heartbeat will be perceptible even though the person is still alive. Respiration is more readily detectable, hence the reliance on respiration as the definitive indicator. However, in Teshuvot Chamam Zvi, R. Ashkenazi maintains that there can be no respiration unless there is life in the heart. R. Moshe Sofer (Chatam Sofer) accords with this view (Yoreh De’ah 338, 1839), adding that cessation of respiration is a definitive sign of death only if the body lies as “inanimate as stone” and there is no pulse whatsoever. R. Sofer maintains that death occurs only upon cessation of both cardiac and respiratory functions. This view is supported by statements of notable R. Isaac Yehuda Unterman, R. Eliezer Yehuda Waldenberg, and R. J. David Bleich. Moreover, R. Bleich expanded that the cessation should be long enough to make resuscitation impossible. All other vital signs are not considered halachic criteria for determining death (Orach Chayim 330:5).

It is important to note that some have advocated for DDNC based upon interpretations of Talmud as recorded in Miskah Oholot 1:6 (describes decapitation) and Gamara Hullin 21a (describes severance of neck vertebrae along with a major portion of the muscle tissue enveloping those vertebrae), however others have countered that the latter still represents a respiratory death standard (Table 1). The prevailing opinion, however, is on the use of cardiorespiratory criteria.

**CATHOLICISM, JURISPRUDENCE and DEATH**

**Fundamentals of Catholic Jurisprudence**

Catholic Church cannon law (Jus Canonicum) is the system of laws and legal principles made and enforced by the hierarchical authorities of the Catholic Church. Other terms used synonymously with Jus Canonicum include Jus Sacrum, Jus Ecclesiasticum, Jus Divinium, and Jus Pontificum. Canon law sources may be divided into the constitutive “Sources of Being” (Fontes Juris Essendi) and the historical “Sources of Knowing” (Fontes Juris Cognoscendi). The Fontes Essendi are the legislators including (in order of primacy): (1) Jesus Christ; (2) the Apostles; (3) The Roman Pontiff (alone or with a general council); (4) district Bishops empowered to enact laws subordinate to common law; (5) customs. The Fontes Cognoscendi are the depositaries in which enacted laws are collected including: (1) the Holy Scripture (Bible: Old and New Testament) and (2) decrees of popes and councils. The primary canonical law sources are the 1983 Code of Canon Law, the Code of Canons of the Eastern Churches, and Pastor Bonus. Other sources include apostolic constitutions, motibus propriis, particular law, and customs.

**Catholicism and Neurologic Criteria to Determine Death**

Among the Fontes Cognoscendi, the Bible’s Old and New Testaments do not clearly describe death determination criteria. The Church’s view on death has evolved significantly over time (Table 2). St. Augustine (influenced by Plato) taught that persons had many souls, including souls for different bodily functions. As such, humans were thought to undergo two deaths: body and person. Conversely, the later St. Thomas Aquinas (influenced by Aristotle) taught that each human had only one soul, and therefore only one death. Thomas’s loss of integration view has since predominated in Christianity since first accepted as doctrine by
the Council of Vienne (1312 A.D.). The contemporary view of the Church is that the departure of the soul is the death of the body and that what remains possesses only the non-integrated life of the individual organs, rather than the life of the body as an integrated whole. The death-event, the separation of the soul from the body, brings about “the total disintegration of [the] unitary and integrated whole” that was the person.

The exact moment of body-soul separation cannot be directly identified by modern scientific method, as acknowledged by Pope John Paul II, however the separation sets in motion an unstoppable process of somatic disintegration producing “biological signs that a person has indeed died”. In other words, if somatic integration of the human organism as a whole continues, it is indirect evidence that the soul is still united to the body. However, the specification of biological parameters indicating that death has occurred “does not fall within the competence of the Church”.

Rather, it pertains to the responsibility and competence of the medical profession to judge and establish, with as much precision as possible, the constellation of signs which can serve as reliable indicators that death has occurred such that a declaration of death can be made with adequate moral certainty. On this, Pope John Paul II (2000 A.D.) added that “for ascertaining the fact of death, namely the complete and irreversible cessation of all brain activity if rigorously applied, does not seem to conflict with the essential elements of a sound anthropology”.

Sharing the interest that Pope John Paul II had in defining the concept of brain death, his successor Pope Benedictus XVI requested a meeting on ‘The Signs of Death’ was organized in 2006 at the Pontifical Academy of Sciences (PAS). During this meeting, 15 international neuroscientists (including Dr. Conrado Estol) were invited to present their views on topics including brain death. Pope Benedictus XVI did not offer his personal views on the subject. Dr. Estol published a review of the meeting. Although the conclusions from this academy meeting reflect DDNC use in a positive light, it is important to note that the PAS does not have magisterial authority.

Thus, although many Catholics accept DDNC based upon Pope John Paul II’s tentative endorsement, it remains controversial within the Church.

**ISLAM, JURISPRUDENCE and DEATH**

**Fundamentals of Islamic Jurisprudence**

Paramount to understanding how Islamic ethics and jurisprudence relates to medicine is an understanding of the concepts of Halal (permissible or lawful), Haram (prohibited), and Makruh (discouraged but not legally forbidden). Often erroneously used interchangeably are the connected but not identical terms Shari’ah, Shari’ah Law or Islamic Law, and the discipline of fiqh (from the Arabic word meaning “discernment”). The word Shara’a (Qur’an 45:18), from which the term Shari’ah is derived, is an overarching concept referring to a divinely ordained and immutable path for Muslims to follow in life in order to gain salvation in the hereafter. But comprehending what God “wants” from humans and fashioning this into moral principles and legal edicts requires human reasoning and discernment. Unlike Shari’ah therefore, Shari’ah Law is a human social construct undertaken by fuqaha (jurists) that is neither divine nor uniform and static through time. Thus, one finds both consensus and diversity in the opinions of jurists in its interpretation and translation into law, even when employing the same “classical” sources or usul al-fiqh (roots or fundamental principles of fiqh) as their framework for reasoning and opinions. Problems arise however when the terms Shari’ah (divine made) and Shari’ah Law (manmade derived through fiqh) are used interchangeably, giving a sense of divinity and immutability to the latter.

As discussed elsewhere, the science of Islamic jurisprudence, or fiqh, can be reduced to 4 founda-
tional principles called usul al-fiqh. These sources (order of primacy) include: (1) the Holy Qur’an and (2) the Sunnah, which consists of the traditions or inspired sayings, deeds, tacit approvals, character and appearance of the Prophet Muhammad as recorded in a genre of literature known as Hadith. A ruling in the Qur’an or Hadith may be conveyed in a text which is either clear, or in language which is open to different interpretations. A definitive text is one which is clear and specific; it has only one meaning and admits of no other interpretations. These are known as Qat’i. The second type of ruling is considered speculative (Zanni), and independent legal reasoning (Ijtihad) is required to understand the most suitable meaning. Of note, the Hadith differs significantly between the Sunni and Shi’a sects.

Other legal sources include: (3) Ijma’ (unanimous scholarly consensus) and (4) Qiyas (precedent-based analogy). On issues where the aforementioned legal sources are ambiguous, jurists employ secondary principles albeit differences of opinion exist regarding their usage between the madhhab (schools of jurisprudence). Juristic principles, including ijtihad (independent legal reasoning), istihsan (preferential reasoning of jurists), al-urf (local customary precedent), and al-masalih al-mursalah (public interest or welfare) among others, have allowed a degree of flexibility and accommodated a diversity of pragmatic legal rulings based on social context. The rulings or fatwa (plural: fatawa) generated through ijtihad are case specific and not globally binding. Disagreements (ikhtilaf) among jurists are seen in a positive light; legal texts record different juristic opinions on the same issue with a specific line of literature devoted to disagreements between jurists (ikhtilaf al-fuqaha). This juristic ikhtilaf is key to understanding the development of the Islamic legal tradition, and can provide an important juristic tool to interpreting Shari’ah Law as it pertains to health and medicine.

The plurality of opinions between, and within, Muslim schools of jurisprudence in ascertaining the legal and the ethical is influenced by geographical and historical differences, cultural and societal diversity, prevailing customs, and the variety of political and administrative systems within which Muslims have existed. Of note, however, under Islamic law “ijtihad is not reversible” (al-ijtihad la yunqad), meaning that one ruling of ijtihad is not reversed by another of differing opinion. This may generate uncertainty or confusion for patients as it pertains to topics such as those discussed in this manuscript, and explains why patients may have contrasting impressions of permissibility.

**Islam and Neurologic Criteria to Determine Death**

Devout Muslims often interpret dying within a religious framework, a normal process in one’s natural lifecycle (Sunnat al Hayat). The Holy Qur’an emphasizes that death is both universal (Qur’an 3:156, 3:185, 29:57, 39:42) and predestined (Qur’an 40:67, 46:3), and thus occurs only with God’s permission. In 1985, the Islamic Organization for Medical Sciences (IOMS) and the Kuwait Foundation for Advancement of Sciences concluded that the Qu’ran does not define death. Even so, the Hadith offers some clarification (Table 3). In a Sunni Hadith narrated by Abo Huraira in Sahih Muslim, the Prophet Muhammad said: “Haven’t you seen when a person dies his gaze stairs; they said “yes”; he said “yes;” he said that’s when his sight follows his soul.” Other signs reported by Muslim scholars include cessation of breathing, loss of muscle tone, and drop in body temperature. Ijma’ and qiyas do not provide clarity, so the highest level of evidence available on this topic is through ijtihad.

No one religious body speaks for all of Islam, thus numerous ethical and legal opinions regarding DDNC exist. Some have argued that while any organ function exists, the soul remains in the body, however such claims are seemingly at odds with existing ijtihad (Table 3). For example, at the 3rd International Conference of Islamic Jurists (1986; Amman, Jordan) of the Islamic Fiqh
Academy (IFA) of the Organization of Islamic Co-operation (OIC), medical specialists unanimously supported DDNC. Even so, the terminology of the final verdict generated many unanswered questions including: (1) which functions are vital; (2) which DDNC criteria are to be used; (3) what determines irreversible; (4) what level of certainty is required; (5) who makes the determination; (6) what level of training is required; and (7) how is brain degeneration to be determined? 11,12,58.

In response to these and other questions, the IFA of the Muslim World League (IFA-MWL; Kingdom of Saudi Arabia; 1987) ruled that DDNC required agreement of three doctors 59. However, their ruling was undermined by the stipulation that any legal consequences linked to death determination may only come into effect after circulation and respiration have stopped 59. In other words, death by cardio-respiratory and neurologic criteria were explicitly not equated 59. Subsequently, 5 of 6 identified fatwa supported the use of DDNC (Table 3) 11,12,60. Lower levels of jurisprudence highlight how these rulings have been implemented on the public level. Any law based on the concepts of al maslaha al ammah or al urf should not contradict the shara ‘ah concept of Hifz-An-nafs (saving life). Eleven of 13 surveyed Muslim majority countries had legislation supporting the use of DDNC (Table 3). Moreover, following the state ruling by Kuwait (opposed DDNC), the IOMS (Kuwait; 1985) rejected DDNC, declaring such persons to represent unstable life (dying but not dead) 61. This was contrasted by the Islamic Medical Association of North America (IMANA; 2003) who not only accepted DDNC (similar to their parent country), but also clarified the issues of diagnostic certainty and level of physician training required to make the determination 11,12,57.

**Islam and Hifz-An-nafs (saving life)**

Within Islamic circles, debates regarding the permissibility of organ transplantation and application of DDNC are deeply intertwined, and controversy exists within Islamic circles regarding the shara ‘ah concept of Hifz-An-nafs (saving life). Concern exists that premature death declaration could allow for organ harvesting for transplantation, thereby violating this concept. This relates to a passage from the Holy Qur’an Surah Al-Ma’idah (5:32):

> “Because of that, We decreed upon the Children of Israel that whoever kills a soul unless for a soul or for corruption [done] in the land - it is as if he had slain mankind entirely. And whoever saves one - it is as if he had saved mankind entirely. And our messengers had certainly come to them with clear proofs. Then indeed many of them, [even] after that, throughout the land, were transgressors.”

Although this verse clearly is not exclusive to medical topics, it may be applicable to them. As such, Qur’an 5:32 may better be viewed as a lens through which to view DDNC and transplantation, rather than evidence to justify a viewpoint.

**CONCLUSION**

In Jewish Law (Halacha), the Torah does not define death declaration criteria. The bulk of Talmudic law advocates the use of cardiopulmonary criteria and does not endorse DDNC. Catholic Church Cannon Law and the Holy Scripture recorded in Bible’s Old and New Testaments do not define death declaration criteria. Following the Council of Vienne, Saint Thomas’s loss of integration view has predominated in the Catholic Church. Subsequent declarations by Pope John Paul II and Pope Benedict XVI have endorsed the cautious use of DDNC. Finally, among the 5 sources of Islamic law, only Ijtihad (the lowest level) addresses DDNC, with 5 of 6 identified non-binding fatwa supporting DDNC. Concern exists that premature death declaration could allow for premature organ harvesting for transplantation and violate the shara ‘ah concept of Hifz-An-nafs (saving life). As such, DDNC remains accepted but debated by many Muslim scholars.
REFERENCES

1. Hardacre H. Response of Buddhism and Shinto to the issue of brain death and organ transplant. Camb Q Healthc Ethics. 1994;3:585-601. [CrossRef]
2. Bleich JD. Contemporary halakhic problems. 4th ed. New York: KTAV Publishing House, Inc.; 1977.
3. Unterman Y. Points of Halacha in heart transplantation. Noam. 1970;13:1-9.
4. Waldenberg EY. Responsa Tzitz Eliezer, vol 9 & 10. Jerusalem: 1977.
5. President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Defining death: Medical, legal, and ethical issues in the definition of death. United States Code Annotated. Washington D.C., USA: Government Printing Office: 1982.
6. Madhkur KL, Awadi AR, Munazzamah al-Islamiaah Ill-Ulum al-Tibblyaah (Kuwait), Muassasat al-Kweedat ill Taqad-dum al- Ilmi, World Health Organization. Human life: Its inception and end as viewed by Islam. In: Islamic Organization for Medical Sciences and Kuwait Foundation for Advancement of Sciences Seminar on Human Life: Its inception and end as viewed by Islam. Kuwait City, Kuwait: Islamic Organization for Medical Sciences; 1985.
7. California State Legislature. California Health and Safety Code § 1254.4. In: California Codes. Sacramento, CA, USA: California Office of Legislative Counsel for the Legislature: 2008. Available from: http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=0100-020000&file=1250-1264.
8. Illinois General Assembly. Illinois health facilities and regulation (210 ILCS 85/1) hospital licensing act § 6.24. In: Illinois Compiled Statutes. Springfield, IL, USA: Legislative Reference Bureau: 2008. Available from: http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1234&ChapterID=21.
9. Executive Branch Agencies of New Jersey. N.J.A.C. § 13:35-6A.6: Declarations of death upon the basis of neurological criteria. In: New Jersey Administrative Code. Trenton, NJ, USA: New Jersey Office of Administrative Law: 2007. Available from: http://www.lexisnexis.com/hottopics/njcde/.
10. New York Department of State. NYCRR § 10:400.16: Determination of death. Albany, NY, USA: New York Department of State’s Division of Administrative Rules: 2005. Available from: http://w3.health.state.ny.us/dbspace/NYCCR10.nsf/56cfc2e225d6269f9785256538006c3ed7/8525652c00680c3e8525652c00634c2470OpenDocument&Highlight=0.400.16.
11. Miller AC. Opinions on the legitimacy of brain death among Sunni and Shi’ah scholars. J Relig Health. 2016;55:394-402. [CrossRef]
12. Miller AC, Zlad-Miller A, Elamin EM. Brain death and Islam: The interface of religion, culture, history, law, and modern medicine. Chest. 2014;146:1092-101. [CrossRef]
13. Mollaret P, Goulon M. The depassed coma (preliminary memoir) [Le coma dépassé (mémoire préliminaire)]. Rev Neurol. 1959;101:3-15.
14. Silverman D. Cerebral death--the history of the syndrome and its identification. Ann Int Med. 1971;74:1003-105. [CrossRef]
15. Silverman D, Saunders MG, Schwab RS, Masland RL. Cerebral death and the electroencephalogram: Report of the Ad Hoc Committee of the American Electroencephalographic Society on EEG criteria for determination of cerebral death. JAMA. 1969;209:1505-10. [CrossRef]
16. Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death. A definition of irreversible coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death. JAMA. 1968;205:337-40. [CrossRef]
17. President’s Commission Study on Brain Death. Uniform Determination of Death Act. Chicago, IL, USA: National Conference of Commissioners on Uniform State Laws. 1981. Available from: http://www.uniformlaws.org/shared/docs/determination%20of%2odeath/udda80.pdf.
18. Pope TM. Brain death rejected: Expanding legal duties to accommodate religious objections. In: Lynch HF, Cohen IG, Sepper E (editors). Law, religion, and health in the United States. New York: Cambridge University Press; 2017: p. 293-305. [CrossRef]
19. Lewis A. Contemporary legal updates to the definition of brain death in Nevada. JAMA Neurol. 2017;74:1031-2. [CrossRef]
20. Nevada Legislative Counsel Bureau. AB424. Revises provisions governing the determination of death. USA: 2017. Available from: https://www.leg.state.nv.us/App/NELIS/REL/79th2017/Bill/5570/Overview.
21. Shemie S, Hornby L, Baker A, et al. International guideline development for the determination of death. Intensive Care Med. 2014;40:788-97. [CrossRef]
22. Earnest MP, Beresford HR, McIntyre HB. Testing for aneuploidy in suspected brain death: Methods used by 129 clinicians. Neurology. 1986;36:542-4. [CrossRef]
23. Greer DM, Varelas PN, Haque S, Wijdicks EFM. Variability of brain death determination guidelines in leading US neurologic institutions. Neurology. 2008;70:284-9. [CrossRef]
24. Powner D, Hernandez M, Rives T. Variability among hospital policies for determining brain death in adults. Crit Care Med. 2004;32:1284-8. [CrossRef]
25. Wijdicks EFM. Brain death worldwide: Accepted fact but no global consensus in diagnostic criteria. Neurology. 2002;58:20-5. [CrossRef]
26. Wijdicks EFM. The case against confirmatory tests for determining brain death in adults. Neurology. 2010;75:77-83. [CrossRef]
27. Broyle MJ, Bedzow I. The codification of Jewish law and the introduction to the jurisprudence of the Mishna Berura. Hamline Law Rev. 2012;35:623-53.
28. Licari FX. An Introduction to Jewish Law. UK: Cambridge University Press; 2019. [CrossRef]
29. Dorff EN, Rossett A. A living tree: The roots of growth of Jewish law. USA: SUNY Press; 2012.
30. Steinberg A. Encyclopedia of Jewish medical ethics. Rosner F, editor. Israel: Feldheim Publishers; 1998.
31. Rosner F, Tendler MD. Definition of death in Judaism. J Halacha Contemp Soc. 1989;17:14-31. [CrossRef]
32. Fink R. Halachic aspects of organ transplantation. J Halacha Contemp Soc. 1989;17:14-31. [CrossRef]
33. Smith EB. Elements of ecclesiastical law: Compiled with reference to latest decisions of the sacred congregations of cardinals. 9th ed. USA: Benziger Brothers; 1887.
34. Bachofen CA. A commentary on the new Code of Canon Law. Vol 1. 2nd ed. St. Louis, MO, USA: B Herder Book Co.; 1918.
35. Chapman G. The code of canon law: A text and commentary. USA: Paulist Press; 1985.
36. Pospishil VJ. Eastern Catholic Church law: According to the code of canons of the eastern churches. USA: Saint Maron Publications; 1993.

37. Motiuk D. Code of canons of the eastern churches, Latin-English edition, new English translation. Studia Canonica. 2001:35-53.

38. Augustinus A. On Genesis: Works of Saint Augustine a Translation for the 21st Century. Part 1, Vol 13. Hill E, editor. USA: New City Press; 2004.

39. Pope John Paul II. Letter of John Paul II to the Pontifical Academy of Sciences. Vatican City; 2005. Available from: http://w2.vatican.va/content/john-paul-ii/it/speeches/2005/february/documents/hf_jp-ii_spe_20050201_p-acad-sciences.html.

40. Nguyen D. Pope John Paul II and the neurological standard for the determination of death: A critical analysis of his address to the transplantation society. Linacre Q. 2017;84:155-86. [CrossRef]

41. Pope John Paul II. Address of the Holy Father John Paul II to the 18th International Congress of the Transplantation Society. Med Etika Bioet. 2001;8:12-4.

42. Pope Pius X. Address to an international congress of anesthesiologists. L’Osservatore Romano. 1957. Available from: http://www.lifeissues.net/writers/doc/doc_31resuscitation.html.

43. Estol CJ. To live and let die: A brain death symposium at the Pontifical Academy of Science. Int J Stroke. 2008;2:227-9. [CrossRef]

44. Babgi A. Legal issues in end-of-life care: Perspectives from Saudi Arabia and United States. Am J Hosp Palliat Care. 2009;26:119-27. [CrossRef]

45. Weiss B. Interpretation in Islamic law: The theory of ijtihad. Am J Compar Law. 1978;26:199-212. [CrossRef]

46. Hallaq WB. A history of Islamic legal theories: An introduction to Sunni Usul al-Fiqh. 1st ed. UK: Cambridge University Press; 1997.

47. Khalilf AW. Science of the roots of Islamic jurisprudence. Kuwait: Dar al Qalam; 1978.

48. Arozullah A, Kholwadia M. Wilayah (authority and governance) and its implications for Islamic bioethics: A Sunni Maturidi perspective. Theor Med Bioeth. 2013;34:95-104. [CrossRef]

49. Vogel FE. Islamic law and the legal system of Saudi: Studies of Saudi Arabia. Vol 8. Netherlands: Brill; 2000.

50. Daar AS, Khitamy A. Islamic bioethics. Can Med Assoc J. 2001;164:60-3.

51. Ahaddour C, Broeckaert B, Van den Branden S. “Every soul shall taste death.” Attitudes and beliefs of Moroc- can Muslim women living in Antwerp (Belgium) toward dying, death, and the afterlife. Death Stud. 2019;43:41-55. [CrossRef]

52. Al-Mousawi M, Hamed T, Al-Matouk H. Views of Muslim scholars on organ donation and brain death. Transplant Proc. 1997;29:3217. [CrossRef]

53. Khan FA. The definition of death in Islam: Can brain death be used as a criteria of death in Islam? J Isl Med Assoc. 1986;18:18-21. [CrossRef]

54. Ebrahim AF. Islamic jurisprudence and the end of human life. Med Law. 1998;17:189-96.

55. Abo Zeid B. Fiqh a-nawazel: Contemporary issues in Fiqh. 1st ed. Lebanon: Mo’sasah Al-resalah; 1996.

56. Padela AI, Arozullah A, Moosa E. Brain death in Islamic ethico-legal deliberation: Challenges for applied Islamic bioethics. Bioethics. 2013;27:132-9. [CrossRef]

57. Padela AI, Shanawani H, Arozullah A. Medical experts & Islamic scholars deliberating over brain death: Gaps in the applied Islamic bioethics discourse. Muslim World. 2011;101:53-72. [CrossRef]

58. Third Conference of Islamic Jurists: Decree number 5. In: Fiqh Academy Book of Decrees. Jordan: Islamic Organization for Medical Sciences and Islamic Fiqh Academy of the Organization of the Islamic Conference; 1986.

59. Grundmann J. Shar’i’, brain death, and organ transplantation: The context and effect of two Islamic legal decisions in the near and middle east. Am J Isl Soc Sci. 2005;22:1-25.

60. Bagheri A, Alali K. Islamic bioethics: Current issues and challenges. In: Bagheri A, Alali K, editors. Intercultural dialogue in bioethics, vol 2. USA: World Scientific Publishing Europe Ltd.; 2018. [CrossRef]

61. Krawietz B. Brain death and Islamic traditions: Shifting borders of life. In: Brockopp JE, editor. Islamic ethics of life: Abortion, war, and euthanasia. USA: University of South Carolina Press; 2003. p. 195-213.