Journal of Palliative Care & Medicine

Gouda et al., J Palliat Care Med 2018, 8:1
DOI: 10.4172/2165-7386.1000327

Research Article Open Access

Knowledge and Attitude of ER and ICU Physicians towards DNR in a Tertiary Care Center in Saudi Arabia: A Survey Study

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Received date: December 23, 2017; **Accepted date:** January 02, 2018; **Published date:** January 08, 2018

Abstract

Introduction: Only a few studies from Arab Muslim countries address DNR practice. Our institute has a clear DNR policy. The knowledge of the existing policy and the attitude towards DNR of emergency room (ER) and intensive care unit (ICU) physicians were studied through this survey.

Objective: To identify the knowledge of the participants of the local DNR policy and guidelines and to summarize the possible barriers of addressing DNR including religious background.

Method: A questionnaire has been distributed to ER and ICU physicians. The answers to the questions were tabulated and analyzed using frequencies and percentage.

Results: Total of 112 physicians with majority (97.3%) are from a Muslim religion. Among the participants 108 (96.4%) were aware about the existence of DNR policy in our institute. 107 (95.5%) stated that DNR is not against Islamic rules. Only (13.4%) of the physicians have advance directives and (90.2%) answered they will request to be placed as DNR if they have terminal illness. Lack of patients and families understanding (51.8%) and inadequate training (35.7%) were the 2 most important barriers for effective DNR discussion. Patients and Families level of education (58.0%) and cultural factors (52.7%) were the main obstacles in initiating a DNR order. Only (1.8%) of the participants stated that DNR is against their religious belief.

Conclusions: There is a lack of knowledge about DNR policy which make the optimization of DNR process difficult. Most physicians wish DNR for themselves and their patients at end of life but only a few of them have advance directives. The most important barriers for initializing and discussing DNR were lack of patient understanding, level of education, and the culture of patients. Most of the Muslim physicians believe that DNR is not against Islamic rules. We suggest that the DNR concept should be part of any training program.

Keywords: Do-Not-Resuscitate; DNR; CPR; Survey; Physician attitude

Introduction

Cardiopulmonary resuscitation (CPR) initially called the closed-chest cardiac massage was first introduced by Kouwenhoven [1]. CPR became mandatory for all hospitalized patients suffering from cardiac arrest [2]. Later on, the use of CPR for all patients was questioned due to low survival rate and poor neurological outcome [3] and the concept of DNR for terminally ill patients became part of medical practice; however, it was always one of the most difficult decisions to be made by physicians.

Many barriers existed when in regard to DNR orders including; lack of knowledge about DNR decision making, physicians being uncomfortable in opening the discussion with the patient or his family [4] and religious and cultural differences among physicians and patients [5-7]. There is lack of research about The DNR area in most of the Arab and Muslim countries and the attitude of Muslim physicians for DNR is not very well known in spite of the presence of Fatwa (a legal opinion or ruling issued by an Islamic scholar) [8,9].

King Abdulaziz Medical City (KAMC) is one of the few hospitals in Saudi Arabia with a formal DNR policy, which has been in effect since 1998. A questionnaire has been distributed Among ER and ICU physicians as they are mostly dealing with patients in critical medical illness who are more likely to develop cardiopulmonary arrest.

The survey was designed in an attempt to identify the attitude, the religious belief, advance directives of the participating physicians and possible barriers and obstacles in addressing DNR status of the patients.

Objectives

We observed substandard practice of DNR concept in our institute and some conflicts are occasionally rising between physicians

themselves and with the family or patients regarding DNR order initiation, discussion, documentation and post DNR measures.

This questionnaire is meant to identify the knowledge of the participating physicians about the existing local policy and guidelines of DNR order as part of the medical practice.

We are also aiming to identify possible barriers and obstacles for practicing DNR concept which might improve the process of initiating DNR order and managing patients who were labelled as DNR.

The impact of Islamic religion and personal belief on the attitude of physicians towards DNR order were also included together with the advance directives of the participating physicians.

Methods and Design

Settings and statistical analysis

King Abdulaziz Medical City (KAMC) KAMC is a 1200-bed tertiary care center and teaching hospital located in Riyadh, Kingdom of Saudi Arabia and affiliated with King Saud Bin Abdulaziz University for Health Sciences.

This questionnaire has been distributed either manually or by email to 154 physicians 71 from ER and 41 from ICU. The response rate was 73%.

The answers to the questionnaire were collected, tabulated and analyzed using IBM, SPSS software Version 22 (property of IBM Corp. 1989, 2013 Chicago IL, USA).

Data was analyzed in terms of frequencies and descriptive statistics, and the results areexpressed as percentages.

Questionnaire (See Appendix 1)

The data collected included demographics (age, sex, religion, income, specialty training and years of experience), awareness about the DNR policy, advance directives of the participants and the importance of guidelines and training in the concept of DNR.

Ethical approval

The protocol of the study has been approved by the International Review Board (IRB) of King Abdullah International Medical Research Center (KAIMRC) Ref. Number IRBC/1421/17.

Local policy guidelines for DNR

The policy concerning DNR order for terminally ill patients in KAMC has been established based on fatwa (a legal opinion or ruling issued by an Islamic scholar) number 12086, dated 30/06/1988, Ethics of the Medical Profession, 2nd edition (2003), Saudi Commission for Health Specialties and Joint Commission International (JCI, 2006).

Three physicians including the attending, another consultant and a staff physician should sign the DNR order electronically in the electronic health care system after discussion with the family or the patient, in which the system will flag the patient automatically as DNR and the order will be valid for 6 months.

In case of conflict between the family/patient and the physician the issue might be escalated to the ethics committee which will address the matter further.

If the patient is labelled DNR, no cardiopulmonary resuscitation (CPR), ICU admission, intubation or inotropic support will be offered to the patient but all other modalities of treatment might be given including support and comfort care.

Results

Total of 112 physicians participated in this questionnaire.

Demographics features of the participants are shown in Table 1.

Participants	Frequency	Percent (%)	Range	Mean	+ SD
Specialty					
ER	71	63.4	-	-	-
ICU	41	36.6	-	-	-
Sex					
Males	82	73.2	-	-	-
Females	30	26.8	-	-	-
Age	-	-	24-60	33.06	7.9
Marital status					
Married	67	59.8	-	-	-
single	45	40.2	-	-	-
Religion					
Muslim	109	97.3	-	-	-
Catholic	1	0.9	-	-	-
Liberal	2	1.8	-	-	-
Religious status					
Religious	97	86.6	-	-	-
Very religious	5	4.5	-	-	-
Non-religious	10	8.9	-	-	-
Annual income (99 participant)					
25,000-100,000 USD	81	81.8	-	-	-
100,000-160,000 USD	18	18.2	-	-	-
Working hours/ week	-	-	24-52	33.06 ± 7.90	7.9
Years of experience	-	-	1-23	5.72	5.31
ICU/ER training					
Trained	89	79.5	-	-	-
Not trained	23	20.5	-	-	-
Position					
Attending	19	17	-	-	-

Staff	28	25	-	-	-
Resident/Fellow	63	56.3	-	-	-
Intern	2	1.8	-	-	-
Entitled for DNR order					
Entitled	45	40.2	-	-	-
Not entitled	67	59.8	-	-	-

Table 1: Demographic Data of the Participants.

71 (63.4%) ER physicians and 41 (36.6) ICU physicians. 73.2% males and 26.8% females with age ranging from 24–60 years with mean of 33.06 7.90 SD, 59.8% married 39% single and Majority 97.3% are Muslim religion, among the participants 86.6% consider themselves reasonably religious, 8.9% non-religious and 4.5% very religious.

Among 112 participants 99 (88.3%) revealed their income and 13 (11.7%) refused to reveal their income. The majority of those who revealed their income (81.8%) earn 25,000–100,000 USD/year and (18.2%) earn more than 100,000 USD/year.

The working hours of the participants range from 24–52 hours/week with a mean of 36.33 ± 8.26. The years of experience ranging from 1.0–23.0 years with the mean of 5.72 ± 5.31. History of specialty training showed 89 (79.5%) are trained in ICU/ER and 23 (20.5%) did not have formal specialty training in ICU/ER.

The position of the participants was as follows: 19 (17%) were Attending, 28 (25%) ICU/ER staff, 63 (56.3%) residents and fellow in training and 2 (1.8%) interns. 45 (40.2%) were eligible to initiate DNR order and 67 (59.8%) were not entitled to initiate DNR order.

Nationality distribution of the participants are shown in Table 2.

Nationality	Frequency	Percent
Saudi Arabia	88	78.6
Pakistan	7	6.3
Egypt	4	3.6
UK	4	3.6
USA	4	3.6
Canada	2	1.8
Syria	1	0.9
Czech Republic	1	0.9
Yemen	1	0.9
Total	112	100

Table 2: Nationality Distribution among participants.

Among the participants 108 (96.4%) were aware about existence of DNR policy in our institute but (67%) did not read the policy and (54.5%) were not familiar of the electronic form of DNR in our hospital electronic health care system.

As per our DNR policy 3 physicians including the attending, one other consultant and one staff should sign the electronic form to be legally flagged in the system. 80 participants (71.4%) believed that 3 physicians are needed to complete the DNR order but 35 (31.2%) thought that the DNR order should be made only by Intensivist and 13(11.6%) stated that DNR should be made by any competent physician.

The validity of DNR in the system as per our policy should be 6 months, however only 67 (59.8%) of the participants knew the correct answer.

70 participants (62.5%) answered that family/patient approval of DNR is not a must and 77 (68.8%) did not know what the policy is stating and what would be the right action in case if the family or the patient refuses the DNR order and there is a conflict between the family and the medical staff.

109 (97.3%) participants responded that DNR is not against their religious believes and 107 (95.5%) stated that DNR is not against Islamic rules however only 52 (46.4) participants were aware about Islamic decree (Fatwa) about DNR.

Almost half of the participants (54.4%) were never involved in discussing DNR with patients/Family. The majority of the participants (85.7%) preferred to open the discussion of DNR by asking about the understanding of patient's illness and medical condition. Of the participants who were actually involved in discussion of DNR the average time they spent was 14.3 minutes with range of 10-25 minutes and (44.6%) were not comfortable during discussion. The barriers and obstacles for opening DNR discussion are summarized in Table 3 and more than one answer were allowed for these questions.

DNR Barrier	Number	Percent(%)
Lack of patient family understanding	58	51.8
Inadequate training	40	35.7
Lack of time	14	12.5
This is not my job	13	11.6
Weak palliative care in my hospital	8	8
I feel the patient will be neglected	7	6.3
Language barrier	7	6.3
It is against my religious believes	2	1.8
DNR Obstacles:		
Patient/Family level of education	65	58
Cultural	59	52.7
Religious	11	9.8
Policy	4	3.6

Table 3: DNR Barriers and Obstacles.

After completion of DNR process there was an agreement among participants that patients labelled as DNR should not receive CPR but may receive antibiotics, intravenous fluid, comfort care and analgesics. There were conflicting answers for other invasive therapy as shown in Table 4.

Intervention	Yes		No	
	Number	Percent (%)	Number	Percent (%)
Admission to ICU	56	50	56	50
Inotropic support	50	44.6	62	55.4
Intubation	37	33	75	67
CPR	5	4.5	107	95.5
Intravenous fluids (IVF)	110	98.2	2	1.8
Analgesics	111	99.1	1	0.9
Antibiotics	110	98.2	2	1.8
Comfort care	108	96.4	4	3.6
Withholding	55	49.1	57	50.9
Withdrawal	43	38.4	69	61.6

Table 4: knowledge about interventions post completion of DNR order.

For interpretation that "DNR means no care, the majority of participants (83.9%) disagree about that statement but almost half (57.1%) of the participant thought that DNR patients might deliberately receive substandard level of care.

Despite the fact that there was agreement that DNR is a reasonable action for a dying patient there was no agreement on withholding and withdrawing of life sustaining measures (Table 4).

Only 62% of the participants were aware of applying the concept of futile treatment in addressing DNR and there were variations among participants in defining the term "futile treatment".

There was an agreement to a great extent about the importance of training during residency for DNR concept, presence of clear guidelines, educational programs involving the nurses in the decision and presence of emotional counselling and support services for the staff.

However, (78.5%) of the participants were not aware about the presence of ethics committee in our institute nevertheless (88.3%) were not willing to use them in DNR context.

Surprisingly only (13.4%) of the physicians have advance directives but (86%) of them believe that every patient should have advance directives.

The physicians were asked that if they developed a terminal illness what course of action would they choose for themselves and (90.2%) answered that they will request to be placed as DNR but they were not certain about ICU admission and being put on ventilators.

Two thirds of the participants stated that they answered this survey because they appreciate the quality of life rather than the value of life.

Discussion

Results of this study revealed some interesting information on the knowledge and attitudes of physicians towards DNR. One interesting finding is that almost half of the participants were never involved in discussing DNR with patients or family and this is probably due to the fact that 83% of the responders in our study were registrars and residents and fellows in training. Our results were similar to other studies from Saudi Arabia and Portugal [10-14] which indicate that there is a need for developing a structured residency program curriculum to address resident skills in end-of life care, and the DNR concept should be part of any training programs.

The compliance of documentation of DNR order in our institute is not up to the optimum [15]. In spite of the presence of local policy and guidelines since 1998 in KAMC, the findings of this study revealed that most of the physicians are aware about the existence of such policy; two thirds of the physicians did not read the detailed policy which raise the question about the efficacy of DNR practice in our institute. One study from Saudi Arabia by Al-Mobeireek [16] found that when considering DNR, physicians in Saudi Arabia shared with their counterparts in the West in many features, notably caring about dignity of the patient, but were also concerned about the religious and the legal stand; however, he related this issue to the absence of clear local policies and guidelines, and in our study a clear policy is available in our institute, and religion was not a factor of concern.

The perception of the physicians participated in this survey about their advance directives and DNR at the end of their lives was similar to what has been found by other researchers, one being from Saudi Arabia [10,17,18], as most of the physicians are in favor of having a DNR order for themselves if they acquire a terminal illness. Majority of physicians prefer the DNR order to be a physician directed decision, yet they believe that every patient should have advance directives; however, few of the participating physicians have advance directives. Should it be concerning that doctors continue to provide high-intensity care for terminally ill patients but personally forego such care for themselves at the end of life? There was a concern among participants that DNR patients might receive substandard level of care. This concern was also shown in other studies [19]. This highlights the importance of defining the goal of care post DNR order. Religion (Islam in our study) was not a limiting factor in addressing DNR. Almost all participating physicians (97.3%) stated that DNR is not against their religious beliefs compared to (66.8) in one study done by Saeed et al. where the religious aspects of end-of-life care among 461 Muslim physicians in the US and other countries [20] were studied. However, only 52 (46.4%) of the participants were aware about the Committee for Islamic Research and Issuing Fatwa in Saudi Arabia issued Fatwa (decree) No. 12086 on 28/3/1409 (1989) based on questions raised using resuscitative measures.

In comparison, one survey done among outpatients, participants expressed divided opinions regarding the association of religion (namely, Islam) with the DNR order, 34.4% endorsing its agreement with Islamic regulations, 34.3% pointing to disagreement, and 31.3% expressing neutrality on the issue [21].

However, the Islamic religion like other religions share the controversy about other aspects of end of life decisions as withholding, withdrawal, organ donation, and euthanasia [22–24].

In the opinion of the participating physicians in this study culture, the patients' and families' level of education and lack of understanding, and inadequate training of physicians, were the main barriers and obstacles for initiation and completion of DNR orders. These findings were similar to two more studies from Saudi Arabia [25,26]. Culture as an obstacle for DNR decisions was also proved to be a crucial factor in the western culture as shown in ETHICUS, SUPPORT and ETHICATT studies [5,27,28]. It seems that more efforts are needed to increase patients' and their families' awareness regarding the meaning

of a DNR order which will improve the physicians-patients' communication about such extremely critical issues.

Conclusion

DNR practice is a very important part of medical practice, currently the knowledge of the physicians about an existing DNR local policy and guideline is not up to the optimum. Most of the physicians do want DNR for themselves in case of terminal illness. The main barriers for initializing and discussing DNR were patient culture and lack of understanding, but Islam as a Religion was not a barrier in addressing DNR.

The awareness about the policy, utilization of the ethics committee, training for junior physicians, national programs for the public, and defining the goals of care post DNR are principal factors for improvement.

Further studies should be multi-centered involving physicians from all different specialties, nationalities, and religions from different Arab countries. Variation will highlight the barriers for DNR practice and help in better implementation of DNR orders in this region of the world.

Limitations of the study

1. Small sample size, single center including only ICU and ER physicians and no comparison made for some concern of tagging one specialty for the knowledge of DNR policy.

2. The study does not highlight the DNR practice in other centers that lack DNR policy.

Strength

The current study has elucidated the state of awareness regarding the DNR order among the physicians in training in our hospital.

Disclosure

Authors have no conflict of interests.

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