



End of Life Decision Making: Dealing with Refusal or Withdrawal Dialysis

การตัดสินใจในระยะสุดท้ายของชีวิตต่อการปฏิเสธ หรือถอนตัวจากการฟอกเลือด

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บทคัดย่อ

บทความวิชาการเรื่องการตัดสินใจในระยะสุดท้ายของชีวิตนี้มีวัตถุประสงค์เพื่อนำเสนอการประยุกต์องค์ความรู้ขั้นสูงเพื่อใช้ประกอบในการตัดสินใจกรณีศึกษาปัญหาการปฏิเสธทางคลินิกเกี่ยวกับผู้สูงอายุโรคไตวายเรื้อรังระยะสุดท้ายที่ปฎิเสธ และไม่ยินยอมรับการฟอกเลือดในประเทศไทย กรณีศึกษาได้ถูกนำมาวิเคราะห์ ภายใต้การผสมผสาน และประยุกต์รูปแบบของ Brunswik' lens model กระบวนการทางความคิด (cognitive process) ทฤษฎีการตัดสินเชิงสังคม (social judgement theory) หลักการทางจริยศาสตร์ และรูปแบบการตัดสินใจเชิงคลินิก จากการวิเคราะห์กรณีศึกษานำไปสู่การสร้างรูปแบบที่ดีที่สุดของกระบวนการตัดสินใจสำหรับการปฏิเสธในคลินิกเมื่อต้องเผชิญกับสถานการณ์การปฏิเสธการฟอกเลือด แนวทางการคิดวิเคราะห์จากหลักฐานเชิงประจักษ์ และการสืบค้นข้อมูลอย่างเป็นระบบเป็นกุญแจสำคัญในกระบวนการสังเคราะห์เพื่อให้สนับสนุนกระบวนการตัดสินใจทางคลินิกขั้นสุดท้าย ดังนั้นการวิเคราะห์ของกรณีศึกษาจึงได้สรุปความน่าจะเป็น และความเป็นไปได้เกี่ยวกับประโยชน์ และความเสี่ยงของผลลัพธ์ใน การตัดสินใจทางคลินิก

คำสำคัญ: การตัดสินใจในระยะสุดท้ายของชีวิต การปฏิเสธการฟอกเลือด การถอนตัวจากการฟอกเลือด

Abstract

This end of life clinical decision making report aims to demonstrate mastery of a clinical problem with an advanced knowledge of decision making in regard to a case study with an ESRD older patient who refused and withdrew from dialysis in Thailand. The case scenario was analysed by using an integrated approach based on considering and applying the Brunswik's lens model, the cognitive processes and social judgement theory, the principles of ethics and the clinical decision model. Then, an analysis was used to create the best decision making process of the clinical practice concerning of the refuse dialysis situation. A critically appraisal of literature evidence and a systematic approach are the key synthesis process for supporting the final clinical decision-making. Therefore, the decisions analysis of the case is concluded on the probability and the potential benefits and risks of outcomes.

Key words: End of Life Decision making, Refusal dialysis, Withdrawal dialysis

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Background

End stage renal disease (ESRD) presents health problems to all patients over the world (Santos 2010) and the number of patients is increasing rapidly. There were approximately 18,000 new cases of ESRD patients per year in Thailand (Teerawattananon, Mugford & Tangcharoensathien 2007). The management of ESRD in Thailand is costly and more than three quarters of these patients who receive dialysis cannot get sufficient support (Teerawattananon, Mugford & Tangcharoensathien, 2007). These is one important reason why many ESRD patients, who are poor and unable to afford to receive dialysis treatment, withdraw or refuse the treatment in Thailand including Mr. A. However, non-dialysis patients have to face many complications. Noble, Meyer, Bridges, Johnson, & Kelly (2010) found that ESRD who patients managed without dialysis had a high symptom burden such as breathlessness, fluid overload and required symptom control. The identifying on the symptoms of the patient needs to be focused and well assessed, as the symptoms may have psychological and social consequences (Noble et al., 2010). At the same time, family members may carry significant burdens as a result of being caregivers including time to care for their patients, physical tasks, financial costs, emotional burdens, mental and physical health risks (Rabow et al. 2004).

According to Galla (2000) a patient who makes a decision to withdraw from dialysis has to be informed by the health care team regarding to the consequences of the decision. Withdrawal from dialysis is one of the commonest causes of death in ESRD patients (Fassett et al .,

2011). According to Murtagh, Addington-Hall, & Edmonds, (2007) patients who withdraw or refuse to receive dialysis have a high statistical possibility of dying within one year, especially, ESRD patients who have comorbidity, such as, heart failure, pulmonary edema and uremia of infection. The ESRD patients aged > 70 years who withdraw from dialysis had been found to have a medium survival rate of around 13.9 months compared with ESRD dialysis patients at 37.8 months (Murtagh, Harris, Marsh, et al., 2006). Moreover, the non-dialysis older ESRD patients with high comorbid complications, such as, cardiovascular disease do have a shorter survival rate than other patient groups (Ellam, El-Kossi, Prasanth, EL-Nahas, & Khwaja, 2009). The burden of non-dialysis treatment can also significantly impact on patient's and family's quality of life (Muthagh et al., 2007). In regard to ESRD patients, the psychosocial and spiritual factors may be a more important aspect to be concerned with (Hutchinson et al. 2005). It is therefore important to guide the patient with an individualized approach in making treatment decisions, since patients are free to choose their own treatment decisions and these need to be respected for the planning of care and be focused on the best interests of the patient (Chandna et al., 2010).

Case scenario:

Mr. A is 75 years old. He had been diagnosed with end stage renal disease (ESRD) for 10 months and had severe uremia, pulmonary edema and left heart failure. He had been advised by a nephrologist to receive hemodialysis at least 2 times/week. Otherwise, his condition



will become more severe and life threatening. Unfortunately, Mr. A wants to go back home and has refused any treatment. His concern and worry were about the cost of treatment and the economic burden to his family. However, his family wanted him to stay and receive treatment at hospital. But, they had no time to take care him at home.

Mr. A still wanted to refuse the treatment and go back home. In this situation, all the health professionals tried to keep a good relationship with him by offering him to have a follow up every 3 months and provide home visits every month.

Case analysis

Considering, Mr. A's case (75 years old), he faced a difficult financial situation in regard to dialysis treatment. He was also concerned that his illness would be burden on his family. After diagnosis he required to receive dialysis treatment, and Mr. A asked renal nurse at the renal unit to find out if there was a possible way to refuse dialysis treatment. He wanted to go home and have the rest of his life at home. The nephrologist, renal nurse and renal care team were concerned about his health and the consequences of the dialysis withdrawal. Nephrologist, nurse and renal care team had a discussion and needed to make sure that he could control the ESRD complications when he received dialysis withdrawal. ESRD older patients are required and depend on caregivers for taking care of day-to-day activities at home regarding the effects of the non-dialysis treatment. This is a very hard task for caregivers, since they have to be dedicated to the patient. Family caregiving

is typically at the core of support of patients at the end of life (Rabow, Hauser, & Adams, 2004). Unfortunately, Mr. A and his family were quite poor. His son and his daughter in law had no time to take care him since they needed to work and took care their children. Even though they were living with Mr. A in the house, they could not have enough time to take care for him. Mr. A's family therefore wanted him stay in the hospital.

Brunswik's Lens Model

In the clinical situation of Mr. A. The renal team felt reluctance to discuss the end of life issue (Davison & Holly 2008). They felt difficulty in making a judgement and a decision, since negative consequences will always happen. In order to improve patients' outcomes and maintain the quality of life of ESRD older patients, the renal care team need to develop knowledge of the end of life decision making for ESRD older patients who withdrawn from dialysis treatment, increase awareness about the uncertainty associated with patients' prognosis and to provide the optimal care to meet patients' holistic needs by avoiding the inaccurate judgement. To be accurate in making decision for Mr. A's case, the Brunswik's lens model and the cognitive continuum theory are applied. Brunswik developed a theory which focuses on human perception (Wigton 2006). He thought human judgement was not perfect and depended on how people perceive an object (Wigton 2006). The perception had a relationship with the object in the environment and the nature of the environment contained many redundant cues which were not reliable. Thus, the human judgement may not be accurate,



since the environment itself is not perfectly predictable (Wigton 2006).

Brunswik created a “Lens model” in which the relationship between decision makers and the environment can be operated and understood (Thompson & Dowding, 2009). As in the model, Brunswik considered that it was necessary to understand not only the organism (nurse or doctor) in the judgement of the decision situation but also the environment which the organism must operate in and adapt to (Thompson & Dowding, 2009). Brunswik’s concept and model can be applied to Mr. A’s case as presented at Figure 1. The key point of Mr. A’s case is to assess that the world is not certain and represented by fallible indicators (cues). The decision maker, have to understand these indicators to make an accurate judgement. The left side of the model presents the health problem of Mr. A (ESRD (stage 5) with high

comorbidities that require the dialysis treatment and this generate the cues. Then, the cues present Mr. A’s problems which have an interrelationship and impact each other. For example, if Mr. A receives dialysis treatment, he will face financial problem. So, he really wants to refuse dialysis and go back home but his prognosis will be more severe, while his family will have the burden of taking care of him at home. The renal care team will also face the professional obligation about having to provide the best care for him. The right side of the model shows the relationship between the judgement that I made (dialysis withdrawal/ discharge of the patient) which is based on the cues. The connecting pathways between both sides of the model present the judge’s ability to estimate the criteria accurately (achievement/patient’s outcome: needs, quality of life, and cost effectiveness).

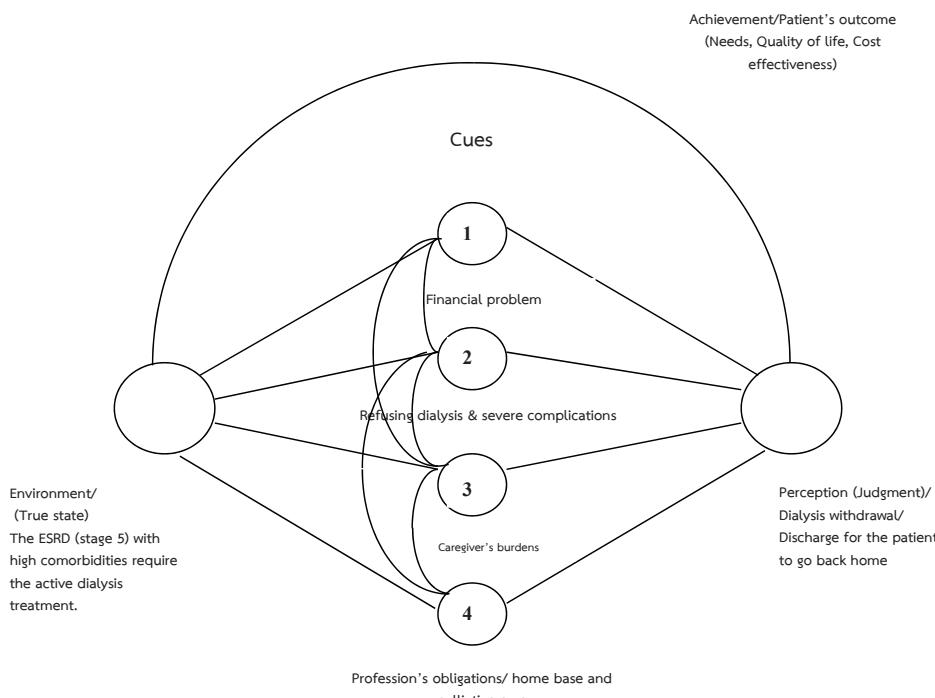


Figure 1 Brunswik’s Lens Model of Mr. A (dialysis withdrawal)



In order to measure the judgment of Mr. A's case, the Social Judgment Theory (SJT) was applied this study which analyses the relationship between the individual decision makers and their operating environments. According to Thompson & Dowding (2009) the idea of SJT is the preservation of the Cognitive Continuum Theory (CCT) which a decision environment can shape the decision making, and judgement reasoning. The next section will explain how CCT helped predict the decision and how it led to an accurate judgement in Mr. A's case.

Ethical Dilemmas and Principles of Mr. A's case

According to Mr. A, he tried to refuse/withdraw from dialysis (so as to receive non-dialysis treatment) and go back home to live with his family. The decision that I was to implement was to the discharge him to go back home. My concern has been raised by the consequences of the severe symptom burden, shortened survival, significant comorbidity of Mr. A and the family's distress and burden. An ethical dilemma may have happened between

I who want to respect Mr. A's autonomy versus the obligation to avoid causing harm to him. In addition, the conflict between Mr. A and his family may have happened since the family wanted Mr. A to stay in hospital and receive dialysis treatment. This is a conflict between the ethical principle of respect for patient's autonomy versus beneficence, and I have the obligation to respect the patient's decision and reduce the risks which may happen to Mr. A and his family. This is a balance and I should make a decision based on the rights of Mr. A, even though, the decision might be unfair for his family. According to Standing (2008) good judgement and accurate decision making is likely to reduce the bias in human judgement which can result in considerable over or underestimation of the probability of success of the judgment outcome. According to Jonsen, Seigler, & Winslade, (2006) the ethical aspect of Mr. A's case can be analysed by following the four topic methods for analysis of ethical problems in clinical medicine adapted to the geriatric patients with ESRD (See Table 1).

Table 1 The four topic methods for analysis of ethical problems in clinical medicine adapted to Mr. A's case

Jonsen et al (2006)	Mr. A's case
<p>1. Medical indicators for Intervention</p> <p>1.1 Prognosis/benefits VS burdens</p> <ul style="list-style-type: none">- What is the functional ability related to age of the patient?- What are the factors and survival data?- What are the adverse outcomes?- Is the patient a candidate for non-dialysis treatment?	<p>Prognosis/benefits VS patient and family burdens</p> <ul style="list-style-type: none">- Mr. A could perform some activity of daily life but he could not do it properly.- Mr. A (75 years) and had severe comorbid which are the importance factor to reduce his survival rate.- Mr. A and his family were poor. Dialysis treatment might make the financial burden to them.

Table 1 The four topic methods for analysis of ethical problems in clinical medicine adapted to Mr. A's case (Continue)

Jonsen et al (2006)	Mr. A's case
<p>2. Patients Preferences</p> <p>2.1 Respect for autonomy</p> <ul style="list-style-type: none"> - Establish general “big picture” goals and outcomes - Explore patient’s personal narrative - Engage the patient’s family <p>Because higher prevalence of cognitive dysfunction and inability to make decisions, substituted judgment will be more common.</p> <ul style="list-style-type: none"> - Be prepare that <p>Preferences may change over time and with new events</p> <p>Some patients will not be able to decide or express their preferences</p> <p>Some may want to receive limited or no information and delegate to others</p>	<p>Respect for autonomy VS Beneficence (non-malfeasance)</p> <ul style="list-style-type: none"> - The goals and outcome on caring for Mr. A are to provide and maintain the quality of life for Mr. A and to response on the patient’s needs by focusing on the patient centre. - Mr. A had a good conscious and cognitive function to make his own decision based on the information provided by nurse and renal care team
<p>3. Quality of life</p> <p>Beneficence and non-malfeasance; respect for autonomy</p> <p>QOL is a value judgment and personal</p> <p>What are the kinds of burden?</p>	<p>Professional obligation VS patients autonomy</p> <ul style="list-style-type: none"> - The dilemma had been happen between the obligation of nurse and renal care team to provide the best care to Mr. A VS respect on Mr. A decision making. - The consequence might affect the quality of life of Mr. A and his family.
<p>4. Contextual Features</p> <p>4.1 Loyalty and fairness</p> <p>(Health resources; family dynamics; health care team)</p> <ul style="list-style-type: none"> - Is the family supportive of the patient’s decision? - Are there conflicts between family members? - What is the cultural, ethnic, or religious belief system and background? - Is there conflict among the healthcare providers or between them and family? 	<p>Respect patient’s rights VS family’s fairness</p> <ul style="list-style-type: none"> - No, Mr. A’s family did not agree with Mr. A decision to go back home. - Mr. A’s family was very poor. They did not have time to take care of him. In Thailand, family members are also believe that patient should stay in hospital and it is not a good thing to look on the dying family member at home. - If nurse and renal care team allow Mr. A go back home, we should make sure that have someone taking care Mr. A. This might not possible for Mr. A family.



Clinical decision making

According to Hammond (1996) the use of the hypothetico-deductive model by nurse during clinical decision making can improve the process of judgement in the difficult clinical situations. O' Neill's clinical decision-making model is applied to synthesis the findings from the information and data of Mr. A. O' Neill's clinical decision-making model for nursing is a multidimensional model that uses both hypothetico-deduction and pattern recognition as a basis of decision making (Banning 2007). The central features of the model include investigating pre-encounter data, anticipating and controlling risk, the provision of standard and nursing care, situational and client modification and triggers to hypothesis generation followed by nursing action.

Considering Mr. A's case, the pre-encounter data was generated from the background, case analysis, Brunswik's Lens Model of Mr. A case, the intuition and analysis continuum approach and the analysis of ethical dilemmas and principles problems of the case. The role of the pre-encounter data is to help and predict the likelihood which patient will develop a particular health problem (Banning 2007). Anticipating and controlling risk can help me to consider the degree of risk and prioritize of the Mr. A's

problems by having a meeting with renal care team and design for keeping a good relationship with Mr. A and his family, offering the 3 months follow up and providing home visit every month. In the part of provision of nursing care, which designed based on the pre-encounter data, Mr. A was discharged to go back home.

However, the condition of Mr. A is the important factor to consider. The hypothesis is generated regard to high comorbidity, high cause of death and ethical problem (conflict of Mr. A and his family, professional obligation versus respect on Mr. A's autonomy, respect for autonomy versus beneficence, prognosis/benefit versus Mr. A and his family burdens and respect on Mr. A's rights versus unfair for his family). Hypothesis assessment of Mr. A can be tested on the clinical situation (including the laboratory results, spKt/v, URR, TAC, NPCR, Hb, Hct., K). These can help to increase effectiveness on the clinical decision-making process. Then the recognition of clinical pattern & selection of hypothesis can support hypothesis by using the evaluation tools (SF-36 version 2). Palliative outcome scale which included the family burden assessment). Finally, the implementation of nursing action that is the home base care toward the end of life of the case is performed. The decision-making for Mr. A presents in Figure 2.



Mr A's condition on dialysis withdrawal

ESRD stage 5 with severe uremia, → High comorbidity → High cause of death

Pulmonary edema and left heart failure

Family burdens → Conflict of Mr A & family

Ethical problems → Professional obligations

- Respect for autonomy VS Beneficence (non-malfeasance)
- Prognosis/benefits VS patient and family burdens
- Respect patient's rights VS family's fairness

Discharged patient to go back home

Hypothesis driven assessment

Meeting with patient care team

(spKt/v, URR, TAC, NPCR, Hb, Hct., K)

Keeping a good relationship

Follow up results (evaluation on

Offering to have a follow up every 3 months

QOL Outcome (SF-36),

Providing home visits every month

Palliative outcome scale (POS)

Family burden assessment

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Figure 2 The clinical decision-making on dialysis withdrawal for Mr. A



Decision analysis

In this section, I would like to make sure that the analysis Figure 1 and 2 which created the decision making model on Mr. A's case is the best option under the circumstance of Mr. A. Decision analysis (Thompson & Dowding 2009) is therefore required to analyse the elements of balance sheets and decision trees assessing the probability of different outcomes and using evidence-based research and systematic reviews on the dialysis withdrawal decision making process. The assessment of patient's values by measuring utility is not included in this study. The systematic review of factors influencing decision-making in patients living with chronic kidney disease is focused on

1. interpersonal relationship (life values),
2. preservation of current well being,

normality and quality of life,

3. need for control and
4. personal importance on benefits and risks (Murray et al. 2009).

Balancing the potential benefits and risks on decision making of Mr. A's case

The different options or actions that could be used for the Mr. A can be assessed by considering the possible benefits and risks of each choice and these are shown in Table 2. The table shows the comparison between two interventions. The potential benefits and harms are described in regard to survival rates, quality of life levels, cost effectiveness, chronic pain, financial burden, and family burden. The factors to consider on decision-making are assessed by using clinical research evidences.

Table 2 The balance sheets of Mr. A's case

Intervention	Benefit	Harm
Dialysis treatment	Survival rate (8.3-15 months) Quality of life level (Low) Cost effectiveness (Low)	Symptom burden (chronic pain = 82%) Financial burden (High) Family burden (Medium)
Withdrawal from dialysis and providing the home based care toward the end of life	Survival rate (6.3-11 months) Quality of life level (High) Cost effectiveness (High)	Symptom burden (chronic pain = 42%) Financial burden (Low) Family burden (Medium)

According to Ellam et al (2009) ESRD patients age >75 year old have high comorbidity, the dialysis treatment will not provide the significant survival advantage. This is a similar results to a study of survival of elderly patients with stage 5 CKD which compares between

conservative management and renal replacement therapy by Chanda et al. (2010). The result shown that ESRD patients at stage 5 age>75 years with high comorbidities, the survival advantage from dialysis was higher than

patients who receive conservative care 4 months. According to Noble et al. (2008) ESRD patients receiving dialysis had a medium survival rate at 8.3 months which was not significantly longer than patients treated with palliative care who had survival rate of 6.3 months. Moreover, dialysis patients had moderate to severe intensity of chronic pain (82%) while patients withdrawing from dialysis had an intensity of 42%. ESRD patients received dialysis faced financial burden more than the patients who withdrew from dialysis, since dialysis is an expensive treatment in Thailand (Chittinandana, Chailimpamontree, & Chaloepipha, 2006). However, the family burden was an important issue when Mr. A withdrew from dialysis and went back home. Home based care during the end of life (palliative care) was also recommended as the best option to provide the best cost effectiveness for ESRD patients managed without dialysis in Thailand (Teerawattananon, Mugford & Tangcharoensathien, 2007). Palliative care or supportive services at home is therefore recommended for non-dialysis patients and their family (Murtagh, Spagnolo, & Panocchia, 2009).

Critique by using research evidence and systematic sources

Considering the consequences of dialysis withdrawal, 24.5% of United States ESRD patients died following withdrawal of dialysis and 20% of deaths of dialysed patients were caused by withdrawal from dialysis (Murtagh, Spagnolo, & Panocchia, 2009). Fassett et al. (2011) show that 35% of the deaths of ESRD patients were also caused by withdrawal from dialysis. It was important to consider this when the renal care

team and I had to make decision on Mr. A's treatment. The best option in regard to the decision analysis, the option B (withdrawal from dialysis by providing home based care toward the end of life), was made. As with evidenced-based decisions, research evidences, guidelines and frameworks on the issue of dialysis withdrawal and the end of life care of ESRD older patients, I found that these can be used to support the clinical decision-making for Mr. A's case if the needs are appraised critically. After using the systematic review to raise the research evidences and applying the Critical Appraisal Skills Programme (CASP): 10 questions to help you make sense of randomised controlled trials (Taylor et al 2004) to screen the best papers, four quantitative papers, one clinical guideline and one clinical framework were chosen to critique regarding to support the decision-making of Mr. A's case.

The growing literature on non-dialysis treatment recommends that the survival may not be so important to those patients and death at home may provide a more humane and dignified end of life experience for ESRD older patients and their families (Swidler, 2009). Murtagh et al., (2006) compared the survival of ESRD older patients managed with dialysis and patients who choose not to have dialysis. They found that older patients with ESRD with significant comorbidities, particularly ischemic heart disease do not benefit from dialysis. In addition old age, living alone, social isolation, high symptom burden, increased co-morbidity and poor quality of life are associated with the decision to withdraw from dialysis (Murtagh et al. 2007).



Murray et al. (2009) identified factors influencing patient involvement in decision-making in the context of CKD and effective intervention to support their decision-making. The result showed that factors influencing CKD patients' participating in decision-making included 1) interpersonal relationship (life values), 2) preservation of current well being, normality and quality of life, 3) need for control and 4) personal importance on benefits and risks. The researchers concluded that patients with CKD may face decision conflict. Development of CKD-specific clinical practice guidelines that include decision support best practice should benefit patients.

The medical treatment of the patients with ESRD who refuse dialysis requires home services and a transition into a hospice system which aims to optimize the quality of life and relieve suffering by providing adequate symptom control (Swidler, 2009). However, patients, families and the renal care-team may struggle with this choice of treatment. Following the clinical practice guideline on shared decision-making in the appropriate initiation of withdrawal from dialysis which was developed and approved by the Renal Physicians Association, the American Society of Nephrology, the American Nurse Association, the National Kidney Foundation, the American Association of Kidney Patients, the National Renal Administrators Association, and the Forum of End-Stage Renal Disease Network, recommended that the withholding or withdrawing dialysis is appropriate when ESRD patients with the decision-making capacity who, being fully informed and making voluntary choices, refuse dialysis or request

dialysis be discontinued (Galla 2000). The guideline also recommended that patients who decide to discontinue dialysis should receive continued palliative care. The hospice health care professionals should be involved in managing the medical, psychological, and spiritual aspects of end-of-life care for these patients. The patients should be allowed to decide to die in a health care facility or at home with hospice care. Bereavement support should be offered to their families.

In United Kingdom, the National Heath Services (NHS) (2009) and the National Services Framework (NSF) for Renal Services set out the End of Life Care in Advanced Kidney Disease: A Framework for Implementation on the high quality end of life care for people with kidney disease in practise. The key elements of the framework are 1) sensitive communication, 2) holistic assessment which includes the needs of carers, 3) joined-up planning and 4) multi-professional working across boundaries linked to kidney care. The End of Life Care Pathway, the End of Life Care Tool and Schematic Model of Conservative Kidney Management provided in the framework, could be used in Mr. A's case.

Conclusion

In conclusion, making decision for dialysis withdraw in Mr. A's case, the Brunswik's lens model was applied to generate the cues (including severe complications, financial and family burden, professional obligations to provide the home base care toward the end of life). The outcome of the patient of the decision-making aims to achieve patient's needs, maintain quality of life, and have cost



effectiveness. The revised version of CCT is applied by using intuition and the analysis continuum approach to predict the decision ensure an accurate judgement in Mr. A's case. The four topic methods for analysis of ethical problems in clinical practice developed by Jonsen et al. (2006) was used to analyse the ethical aspects of Mr. A's case which include 1) prognosis/benefits versus patient and family burdens, 2) respect for autonomy versus beneficence (non-maleficence), 3) professional obligation versus patients autonomy and 4) respect patient's rights versus family's fairness. The O' Neill's clinical decision-making model is applied to create the clinical decision making model of Mr. A from which the home

based care toward the end of life is chosen to be implement as a nursing action. Then, the decision analysis process, was used which included balancing the potential benefits and risks of the decision making. A decision tree was used to assess the probability of different outcomes in Mr. A's case, there were analysed and the best option of decision making in advance clinical practice of Mr. A's case was calculated. Finally, option B (the probability of withdrawal from dialysis treatment and receiving home based care toward the end of life) was demonstrated to be the best option based on the critique and synthesis by using research evidence and systematic sources.

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