

## Case Report

## Completion of Ethical Dilemma and its Medicolegal Aspect in the Case of Pregnancy with History of Rheumatic Heart Disease

### *Penyelesaian Dilema Etika dan Aspek Medikolegalnya pada Kasus Kehamilan dengan Riwayat Penyakit Jantung Rheumatik*

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#### Abstract

**Objective:** To investigate more regarding the ethical dilemma resolution and medico-legal aspect of medical pregnancy termination due to preexisting Rheumatic Heart Disease (RHD).

**Methods:** a Case report, presented a case of heart failure due to RHD in pregnancy, a 33-year-old patient in her third pregnancy with multiple valve disease including severe mitral stenosis, moderate mitral regurgitation, and mild tricuspid regurgitation. The patient came to the emergency ward due to shortness of breath worsening when she started becoming pregnant. The medical decision taken is very dilemma between continuing the pregnancy with the risk of endangering the mother's life or terminating the pregnancy with the risk of the mother losing her fetus.

**Results:** After a joined conference that involved some medical, ethical, medicolegal and spiritual expertise discussing the best therapeutic options for patients, it was decided that the patient's condition was very high risk if the pregnancy was continued, using the minus malum principle, which is to take an actions with minimal risk, hence termination pregnancy is worse than the patient's death. Another ethical principle is beneficence which is for the good of the patient. The clinical ethics considered are medical indication and quality of life.

**Conclusions:** The ethical concept should guide the obstetrician to reach ethically justified judgment regarding the balance between autonomy-based and beneficence-based obligation to the pregnant mother and the fetus. Women with RHD of reproductive age must receive early preconception evaluation and advice regarding the potential impact of pregnancy on their cardiovascular function.

**Keywords:** ethical dilemma, medico-legal, pregnancy, rheumatic heart disease.

#### Abstrak

**Tujuan:** Menyelidiki lebih lanjut tentang penyelesaian dilema etika dan tinjauan aspek medikolegal terhadap terminasi kehamilan medis karena Penyakit Jantung Rheumatik (PJR) yang sudah ada sebelumnya.

**Metode:** Laporan kasus, disajikan sebuah kasus gagal jantung karena PJR pada kehamilan, seorang pasien berusia 33 tahun pada kehamilan ketiga dengan penyakit katup ganda termasuk stenosis mitral berat, regurgitasi mitral sedang, dan regurgitasi trikuspidringan. Pasien datang ke ruang gawat darurat karena napasnya yang pendek memburuk ketika mulai hamil. Keputusan medis yang diambil sangat dilematis antara meneruskan kehamilan dengan risiko membahayakan jiwa buat auterminasi kehamilan dengan risiko si ibu kehilangan janinnya.

**Hasil:** Setelah dilakukan join conference yang melibatkan beberapa keahlian baik medik, etik, medikolegal maupun spiritual membicarakan pilihan terapi terbaik buat pasien maka diputuskan bahwa kondisi pasien sangat berisiko tinggi apabila kehamilan diteruskan, dengan menggunakan prinsip etika minus mallum yaitu mengambil tindakan yang lebih kecil keburukannya, maka terminasi kehamilan lebih kecil keburukannya dibandingkan kematian pasien. Prinsip etika yang lain adalah beneficence yaitu demi kebaikan pasien. Etika klinik yang dipertimbangkan adalah indikasi medis dan kualitas hidup.

**Kesimpulan:** Konsep etis harus memandu ahli obstetrik untuk mencapai penilaian etis yang dibenarkan tentang keseimbangan antara kewajiban berbasis otonomi dan berbasis beneficence kepada ibu hamil dan janin. Perempuan dengan RHD usia reproduksi harus menerima evaluasi prakonsepsi dini dan saran mengenai dampak potensial kehamilan pada fungsi kardiovaskular mereka.

**Kata kunci:** Dilematik, kehamilan, medikolegal, penyakit jantung rheumatik

## INTRODUCTION

There are many ethical dilemmas in obstetrics and gynecology field starting from the beginning of life, the problem of determining the beginning of life, abortion: pro-choice versus pro-life, human embryo technology, sex determination, bioethical aspects of stem cells, pre-embryonic diagnostics for deformed fetuses and genetic disorders, gender and reproduction, assisted reproduction technology, surrogate mother, sperm bank, sterilization, in vitro fertilization, wrong birth, wrongful life, wrongful conception and ethics in obstetric care. One case that often raises an ethical dilemma in day-to-day obstetric services is decision-making regarding pregnancy with serious complications associated with it.

At present, it has been reported that 0.2-0.4% of all pregnancies are complicated by cardiovascular disease.<sup>1</sup> With the average rate of two deaths per 100.000, cardiovascular disease is the most significant indirect cause of maternal death worldwide due to heart failure.<sup>2</sup> There are various kinds of heart disease resulting in heart failure including ischaemic heart disease, peripartum cardiomyopathy, Rheumatic Heart Disease (RHD) and congenital heart disease. Over the past decade, RHD has become one of the main priority in global health. Indonesia, China, India, Pakistan, Democratic Republic of Congo has been reported to be the highest prevalent country of RHD, accounting for 73% of global case. Among the twenty RHD-endemic countries, the prevalence is higher in women of childbearing age.<sup>3</sup>

In pregnancy itself, the preexisting cardiac disease is a major contributor to maternal death worldwide, especially in low to middle-income countries. The proportion of women with either congenital or acquired heart disease who reaches reproductive age and are becoming pregnant has been increasing. This is caused by massive breakthrough has been reached in cardiovascular diagnostic method and cardiothoracic surgery, leading to increased survival rates of patients with heart disease.<sup>4</sup> Nevertheless, pregnancy itself has profound effects on the cardiovascular system, thus increasing significant risk of maternal and fetal morbidity and mortality. Neonatal morbidity itself is varied, from growth restriction to prematurity. This has created new challenge

for the multidisciplinary team to provide accurate preconception advice, ensure management during pregnancy, and talking about ethical and medicolegal issues in relation to pregnancy in a female with cardiac disease.

## CASE

Mrs I, a 33-year-old patient in her third pregnancy, was referred at 12 weeks gestation to the obstetric and gynecologic department with a diagnosis of congestive heart failure. Her functional status was New York Heart Association (NYHA) class III-IV. She had a history of RHD for one year before hospital admission. Initially, she came to the emergency ward due to worsening shortness of breath since she was pregnant. She complained of night cough, breathlessness on ordinary activity such as walking short distance ( $\pm 100$  m) and while lying flat. She generally sleeps with two, sometimes three pillows. Sometimes, she felt palpitation. Antenatal care was done twice by midwife and patient had received preconception counselling from the cardiologist and obstetric gynecologist to not get pregnant due to her valve heart disease. Vital signs on admission: Blood Pressure 90/60 mmHg; Respiratory Rate 28 x/minute; Heart Rate 102 x/minute, irregular; Temperature 36.9°C. Examination of the cardiovascular system: neck veins were distended, irregular S1S2, and the murmur was heard.

The ultrasound showed single and alive fetus, suitable to gestational age with detected heart rate. The electrocardiogram revealed atrial fibrillation. The echocardiography confirmed moderate mitral regurgitation, severe mitral stenosis (Wilkins Score: 4), mild tricuspid regurgitation, dilatation of left atrium and ventricle, and Ejection Fraction (EF) of 51%. Patient's husband was eager to continue the pregnancy. Through the long discussion, the pregnancy was ultimately terminated and she recovered well.

## Clinical Condition

We presented a case with valve damage secondary to RHD. In this case, the patient is already suffering from heart failure. In developing countries including Indonesia, rheumatic heart disease is still the most frequent cardiac disease during pregnancy ( $\pm 75\%$ ), whereas congenital

heart disease is much less common ( $\pm 15\%$ ). Meanwhile, in the United States, hypertensive disorders are the most frequent cardiovascular events. It is complicating nearly 7% of all pregnancies.<sup>5</sup> Many of these women have never undergone medical screening, whereas some do not notice that they have valve heart disease. This emphasizes the need for a careful cardiovascular assessment before and at the beginning of pregnancy.

Mitral valve stenosis is the most common lesion, and the one that carries the highest risk. According to ROPAC (Registry of Pregnancy and Cardiac Disease) report which included the largest prospective cohort of pregnant woman with RHD ( $n=390$ ), mitral stenosis was less well tolerated than mitral regurgitation.<sup>6</sup> In this case, the patient was already suffering from severe mitral stenosis, moderate mitral regurgitation, and mild tricuspid regurgitation. Rates of heart failure were greatest in severe mitral stenosis (49.1%). Meanwhile, women with mixed moderate to severe stenosis and regurgitation showed similar outcome to those with severe mitral stenosis. Severe mitral stenosis is associated with adverse fetal outcome including low birth weight and preterm birth.<sup>6</sup>

### **Ethical Considerations**

In this case, the patient had received preconception counselling which emphasize that she cannot be pregnant due to her cardiac condition. Nevertheless, she and her husband were decided to be pregnant, against the physician's decision. Ideally, patient with multiple and complex cardiac disease should attend a joint consultation with all relevant member of multidisciplinary team that includes obstetrician, cardiologist, bioethicist, medicolegalist, anesthesiologist, religious advisor and midwives. Each of team member reports the knowledge regarding the case to make a detailed plan of care. Opinions on cardiac function from the cardiologist is always more authoritative than from the obstetrician.

Ethically, the basic values adopted by doctors are to seek a balance of benefit-risk by prioritizing greater clinical benefits for clinical harm to patients as a consequence of doctor's management. Issues related to ethics are basic ethical principles such as beneficence (non-

profit), non-maleficence (not harmful), justice, and autonomy (patient autonomy) which are key factors in decision making.<sup>7</sup> Patients criteria which will include the termination of pregnancy do the actions specified by consideration principles base of ethics,<sup>8,9</sup> or with using the theory of clinical ethics.<sup>9,10</sup> Basically every medical situation associated with the four principles base of ethics (moral principles), namely autonomy, beneficence, non-maleficence and justice.<sup>8,9</sup>

Autonomy means any medical procedure must be consented to the patient, beneficence means any medical procedure should be directed to the good of the patient, non-maleficence means any medical procedure should not be allowed to worsen the patient's condition. Justice means that attitudes or medical actions must be fair. Both beneficence and non-maleficence are well known as traditional base of ethics, while autonomy and justice are well known as contemporary base of ethics.<sup>8</sup>

Ethical dilemma often occurs in hospitals when faced with a moral principle of autonomy (patient preference) of other moral principle or principles when faced with non-maleficence and beneficence, such as when the patient's wishes (patient's preference/ autonomy) was contrary to the principles of beneficence or non-maleficence, and if something contains beneficence actions and simultaneously non-maleficence as in the rule of double effect.<sup>8,9</sup> But the most appropriate choice must be taken, the ethical principle that can be used is the prima facie principle.<sup>8</sup>

The principle of autonomy is the centre for participatory or information-based decision making, which involves patients. Adult patients can make autonomous decisions regarding their medical care. In participatory decision making, doctors can guide decisions based on which evidence is reasonable and possible for patients.<sup>9</sup> In addition, according to Beauchamp and Childress's theories, there are other principles of ethics that can be considered. The physician can use the principle beneficence and nonmaleficence together. Beneficence always give the best practice to the patient, and nonmaleficence intended prevent ugliness on patient.<sup>8</sup> Based on the concept of beneficence and non-maleficence, doctors must make maximum efforts to optimize care for patients. The main goal is to provide

minimal pressure, distress, and pain for patients and family members.<sup>11</sup> In addition, the doctor must also follow the principle of *minus malum* which means choosing the decision with the least negative effect and the principle of *maximum bonus* which means choosing the decision with the greatest positive effect.<sup>9</sup>

## DISCUSSION

The questions should be answered by the physician are, will the mother suffer more if pregnancy is not terminated? What are the consequences to the fetus if pregnancy is not terminated? Moreover, physician should also follow medico-legal principle. These are "*minus malum*" which means choose the decision with least negative effect and "*maximum bonus*" which means choose the decision with largest positive effect.<sup>9</sup>

According to risk stratification, this case is considered to be World Health Organization (WHO) Class IV which means that patient is extremely in high risk and pregnancy is contraindicated secondary to severe morbidity and high risk of maternal mortality. Particularly, patient in this category who have already been symptomatic in early pregnancy is considered to terminate the pregnancy.<sup>1,12</sup> In addition, the patient was also suffering from atrial fibrillation which might increase the maternal and fetal risk. This leads to moral dilemma to continue the pregnancy as the patient's wish or to terminate the pregnancy because of it threatens the mother's life. In this case, one of the considerations beside mother's cardiac condition which tend to pregnancy termination is that the patient already have two healthy children. Decision making for do pregnancy termination in a manner ethics well according to Beauchamp and Childress's theories and clinical ethics theory can be seen to the table 1:

**Table 1.** Completion Ethical Dilemma

Clinical ethics	Principle of ethics	Recommendation
Medical indication: A 33-year-old patient in her third pregnancy was referred at 12 weeks gestation with a diagnosis of congestive heart failure. Her functional status was New York Heart Association (NYHA) class III-IV.	By using the principle of beneficence and non-maleficence.	Recommended
Patient preferences: If the couple declines to terminate the pregnancy, the physician should respect the patient's decision and accompany them in the pre- until the post-natal period.	By using the principle of autonomy .	Recommended
Quality of life: She had history of RHD for one year before hospital admission. Initially, she came to emergency ward due to worsening shortness of breath since she was pregnant.	By using the principle of beneficence, non-maleficence and autonomy.	Recommended
Contextual features: Mother's cardiac condition which tend to pregnancy termination is that the patient already have two healthy children	By using the principle of justice and fairness.	Recommended

Before the act of terminating pregnancy, clinical management must offer choices; ethically the best decision is a joint decision between the doctor and the patient. Patients who are pregnant should be offered the choice between continuing and ending their pregnancy. If the patient chooses to end the pregnancy, termination must be done. However, it is now more difficult to get patient approval because they receive medical information from the medical team and also non-medical teams. In this situation, an ethical dilemma occurs between the desire of the

patient (patient preference) and the wishes of the doctor (medical indication).<sup>10</sup>

If the couple declines to terminate the pregnancy, the physician should respect the patient's decision and accompany them in the pre-until the post-natal period. Several reasons the patient may decline any medical termination of pregnancy are divided into three major groups. Firstly, the patient wants to avoid guilty feeling for ending the life of the fetus. For the medical team, they should convince the decision

making of pregnancy termination because of the high risk of morbidity and mortality to the mother. Secondly, nearly 35% of mothers did not want for a medical termination due to religious beliefs. Thirdly, 17% of the patients declined to terminate pregnancy because they do not trust the diagnosis and/or prognosis. They have hopes that their life is not threatened and their child could survive in a healthy condition.<sup>13</sup> Through detailed information given by the physician, it can make patient to follow the physician's instruction to terminate the pregnancy, because it is clear that the risk outweighs the benefit of continuing pregnancy.

### CONCLUSIONS

Ethics is an essential aspect of the management of pregnancies complicated by heart disease. The ethical concept should guide the obstetrician to reach ethically justified judgment regarding the balance between autonomy-based and beneficence-based obligation to the pregnant mother and the fetus. Women with RHD of reproductive age must receive early preconception evaluation and advice regarding the potential impact of pregnancy on their cardiovascular function. Some serious, complex medical problems pose a dramatically increased risk for adverse health events during pregnancy.

### REFERENCES

1. Regitz-Zagrosek V, Blomstrom Lundqvist C, Borghi C, Cifkova R, Ferreira R, Foidart J-M, et al. ESC Guidelines on the Management of Cardiovascular Diseases During Pregnancy. *Rev Española Cardiol*. 2012;65(2):171.
2. Knight M, Nair M, Tuffnell D, Kenyon S, Judy S, Brocklehurst P, et al. Saving Lives, Improving Mothers' Care: Surveillance of maternal deaths in the UK 2012–14 and lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009–14 [Internet]. Oxford: Nat Perinatal Epidemiol Unit. 2016:1-102.
3. Watkins DA, Johnson CO, Colquhoun SM, Karthikeyan G, Beaton A, Bukhman G, et al. Global, Regional, and National Burden of Rheumatic Heart Disease, 1990–2015. *N Engl J Med*. 2017;377(8):713–22.
4. Thompson JL, Kuklina E V., Bateman BT, Callaghan WM, James AH, Grotegut CA. Medical and Obstetric Outcomes among Pregnant Women with Congenital Heart Disease. *Obstet Gynecol*. 2015;126(2):346–54.
5. Iserin L, Ladouceur M, Cohen S. [Heart disease and pregnancy]. *Rev Prat*. 2012;62(7):929–33, 936.
6. Van Hagen IM, Thorne SA, Taha N, Youssef G, Elnagar A, Gabriel H, et al. Pregnancy outcomes in women with rheumatic mitral valve disease: Results from the registry of pregnancy and cardiac disease. *Circul*. 2018;137(8):806–16.
7. Chervenak FA, McCullough LB, Skupski D, Chasen ST. Ethical Issues in the Management of Pregnancies Complicated by Fetal Anomalies. *Obstet Gynecol Surv*. 2003;58(7):473–83.
8. Beauchamp TL and Childress JF. *Principles of Biomedical Ethics* (7th ed). New York: Oxford University Press. 2013: 190-317.
9. Kusmaryanto JB. Ethical Problem at the End of Life. Center for Bioethics and Medical Humanities. *Kursus Bioetika*. 2012: 1-8.
10. Jonsen AR, Siegler M, Winslade WJ. *Clinical Ethics a Practical Approach to Ethical Decisions in Clinical Medicine* Book 7th ed. The McGraw Hill Companies. New York. 2010:9-159.
11. McLimunn C. Withholding and Withdrawing Medical Treatment from a Patient: is the Best Action on Omission?. *J NI Ethics Forum*. 2006; 3:113-22.
12. Thorne S, MacGregor A, Nelson-Piercy C. Risk of contraception and pregnancy in heart disease. *Heart*. 2006;92(10):1520–5.
13. Abi Tayeh G, Jouannic JM, Mansour F, Kesrouani A, Attieh E. Complexity of consenting for medical termination of pregnancy: Prospective and longitudinal study in Paris. *BMC Med Ethics*. 2018;19(1):1–7.