Selective feticide in late trimester: Misinterpretation

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Parents who are confronted with a diagnosis of severe fetal abnormalities and/or genetic findings (eg, trisomies), such as chromosomal aberrations, structural central nervous system abnormalities, structural heart defects, and multiple malformations, detected at a late gestational age (GA) usually face a moral and ethical dilemma and are under the heavy psychological burden and the extremely high risk and emergency to the mother's mental health, which is compounded by the fact that, many hospitals are opposed to carrying out feticide, based on a violation of medical ethics, as "autogenocide" and "early euthanasia."[1] To overcome the aforementioned problems, many developed countries, such as Austria and German,[2,3] describe feticide as a humanitarian, ethical, medical, and legal form of late termination of pregnancy and additionally that danger to the life and health of the pregnant woman, as well as to her social and psychological health, [can] be a justification for assisting in a termination of pregnancy, [….] as no embryo or fetus can be saved in opposition to the mother.[2,3] Therefore, selective feticide is an important issue that needs further discussion. We are happy to learn an article published in the current issue of the *Journal of the Chinese Medical Association* to address this topic entitled "Maternal outcome of selective feticide due to fetal anomaly in late trimester: A retrospective 10 years' experience in Taiwan."[4] The current article is worthy of our attention.

The authors retrospectively compared the difference of maternal and survival fetal outcome of 16 dichorionic twin pregnancies (twins) associated with one fetal abnormality, including structure abnormalities (n=7) and genetic/chromosomal abnormalities (n=9).[4] All abnormal fetuses of dichorionic twins were treated with feticide procedure by intracardiac injection of potassium chloride (KCL).[4] Among these, 11 were performed before the 24 weeks of GA (at early pregnancy), and only 5 were performed at late pregnancy.[4] The results showed that the survival newborns were delivered significantly earlier in the late pregnancy group compared with those at early pregnancy.[4] Other parameters, including rate of preterm labor, newborn body weight (BW), GA at delivery, and rate of neonatal intensive care unit (NICU) administration seemed to be absent from statistical significance.[4] The authors concluded that intra-cardiac injection of KCL was effective for feticide and safe for both mothers and survived fetuses, recommending that this selective feticide can be served as an alternative approach for twins with fetal abnormality after sufficient consultation. The finding of the current article is interesting and worthy of discussion.

First, as shown by title of their article as "maternal outcome of selective feticide due to fetal anomaly in late trimester," however, the authors did not really evaluate the maternal outcome after selective feticide. The definition of the evaluated item of "maternal outcome" was even absent in their study, although "maternal outcome" is a very simple and widely used item found everywhere,[5–7] contributing to total absence of results addressing maternal outcome in their study. As predicted, selective feticide extremely rarely results in maternal death (no maternal death was reported in their study); however, morbidity may be really followed after feticide. Additionally, morbidity should not be limited to the physical injuries. With the aid of questionnaire,[8,9] psychological, social, economic, and even relationship with family traumas/harms should be included. Research indicates several challenges, including moral conflict and negative emotions, regret, guilt, self-blame, judgment, and physical pain may be followed after feticide, although many researchers who are in favor of feticide seem to downplay the consequences of feticide, whereas those who oppose feticide tend to emphasize the consequences of feticide.[10] Without doubt, these pregnant women should face a moral and ethical dilemma and are under extreme psychological stress during the entire course to decide feticide, and the time course may include "before," "during," and "after" the procedure, and of the most importance, sometimes, pregnant women should struggle with it alone. Unfortunately, the authors neglected the potential risk of extreme psychological pressure, as well as social disadvantages, economic burdens, and even family violence or possible emotional issues traumatic to these women undergoing feticide in their study.

Second, the perinatal outcome may be euphuistic by Sung et al,[4] who analyzed 16 dichorionic twins. In fact, we can consider that all pregnancies in their study were singleton following selective feticide, and the outcome should be similar to those of women with singleton pregnancy. However, near two-thirds of pregnancies (10/16) were ended by preterm birth, and one-third of newborns (5/16) should be admitted to the NICU, although no perinatal death was reported, suggesting that their conclusion should be read in caution. The authors seemed to overlook the potential risk of perinatal morbidity or mortality when their procedure as selective feticide was performed. One study used radiofrequency ablation as a treatment for selective feticide in the similar criteria of Sung et al[4] (one fetal anomaly in monochorionic diamniotic twins), and the results showed perinatal

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Conflicts of interest: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

Journal of Chinese Medical Association. (2022) 85: 137-138.

Received October 5, 2021; accepted October 5, 2021.

doi: 10.1097/JCMA.0000000000000664.

mortality can reach up to 33% (11/33), and delivery of premature preterm newborns were 15% and 18% in GA at birth 24-31 6/7 and 32-36 6/7, respectively.[11] Additionally, when compared with mean 36.1 weeks of GA at delivery (with mean GA at feticide procedure of 19.8 weeks of GA) in the Rahimi-Sharbaf et al's study,[11] the mean GA at delivery was 36.7 weeks (early) and 33.4 weeks (late) in Sung et al's group.[4] The perinatal outcome seemed to be worse if the selective feticide was performed at late pregnancy. Based on the very similar results between two studies,[4,11] if selective feticide cannot be avoided, we suggest that this selective feticide had better be performed before 24 weeks of GA (at early pregnancy). However, this concept seemed not to be supported by Sung et al's[4] study. Furthermore, as shown by authors, structure abnormality may be detected in the middle or late pregnancies. For example, high-level ultrasound is often applied after 24 weeks of GA, and as shown by authors, more than 40% of cases belonged to structural abnormalities. We are wondering how they can perform this procedure before 24 weeks of GA. Moreover, the majority of patients (two-thirds) in Sung et al's[4] study have been finished by selective feticide before 24 weeks of GA; it is relatively challenged that the authors claimed their study addressing selective feticide performed in late trimester. In fact, only 5 patients were performed after 24 weeks of GA.

Third, it is relatively interesting to find that nearly all pregnant women were delivered vaginally (80%) in the late pregnancy group compared with half by cesarean section (54.5%) at early pregnancy, although statistically significant difference was not found between 2 groups.[4] NICU administration rate seemed to be different between two groups, although statistically significant difference was also absent.[4] As emphasized by us before,[12–15] the statistical significance is only a really reflective of the findings of the study based on the reliability of the study results, but it may not be totally presentative of "the extent of change." The change should make a real difference to subject lives, how long the effect remains, consumer acceptability, cost-effectiveness, and ease of implementation.[12–15] Sung et al's[4] study seemed to have the aforementioned misinterpretation.

Finally, the current study only enrolled the dichorionic twins with one fetal abnormality; it is not appropriate to claim that their approach (intracardiac infection by KCL) can be applied to the other type of twins. Taken together, although their study is worthy of attention, their results should be interpreted with much caution due to limited case number in their study.

ACKNOWLEDGMENTS

This article was supported by grants from the Ministry of Science and Technology, Executive Yuan, Taiwan (MOST 109-2314-B-075B-014-MY2 and MOST 110-2314-B-075 -016 -MY3), and Taipei Veterans General Hospital (V110C-082, and VGH109E-005-5).

The authors appreciate the support from Female Cancer Foundation, Taipei, Taiwan.

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