

Table 4. Arrhythmic Cardiovascular Events (n=13) During 27 Pregnancies in 23 Women With HCM

Case no.	Type of arrhythmia	Period (week)	Correspondence	Antiarrhythmic drug	Dose (mg)
2	PVC	30	Antiarrhythmic drug started	Metoprolol	30
3	NSVT	30	Antiarrhythmic drug started	Metoprolol	60
4	NSVT	13	Antiarrhythmic drug started	Propranolol	60
5	NSVT	32	Antiarrhythmic drug started	Metoprolol	40
7	PVC, PAC	32	Antiarrhythmic drug started	Metoprolol	40
8	PVC	12	Antiarrhythmic drug started	Bisoprolol	2.5
10	PVC	13	Antiarrhythmic drug started	Propranolol	60
11	NSVT	32	Antiarrhythmic drug started	Atenolol	25
12	NSVT	13	Antiarrhythmic drug increased	Metoprolol	40→60
12	NSVT	29	CS	—	—
17	PVC	31	Antiarrhythmic drug started	Propranolol	20
25	VT	24	Antiarrhythmic drug started	Carvedilol	10
27	PVC	Postpartum	Antiarrhythmic drug increased	Propranolol	60→80

NSVT, nonsustained ventricular tachycardia (VT); PAC, premature atrial contraction; PVC, premature ventricular contraction. Other abbreviations as in Tables 1,2.

ing 13 events (76%) related to arrhythmia (Table 4). Arrhythmia was the most common cardiovascular event. The cardiovascular events occurred in the early stage of pregnancy at approximately 30 gestational weeks, or postpartum (Figure). The events related to arrhythmia mainly occurred in the early stage of pregnancy or at approximately 30 gestational weeks. A total of 4 pregnancies were terminated because of a cardiovascular event (cases 8, 10, 11, 12). In case 8, the pregnancy was terminated at 31 gestational weeks because the mother was developing pulmonary hypertension and the PG of LVOTO had increased rapidly (peak PG 57 mmHg). Postpartum, the PG returned to the pre-pregnancy value. In cases 10 and 11, pregnancy was terminated at 27 and 36 gestational weeks, respectively, because in both cases there was an increased PG of LVOTO resulting from increased preload, and the mothers developed lung edema. After termination, the lung edema improved in both cases. In case 12, the pregnancy was terminated because nonsustained ventricular tachycardia (NSVT) could not be controlled with drug therapy. Thus, 3 of the 4 pregnancies (75%) were terminated because of a cardiovascular event in the mother who had started or increased her dose of antiarrhythmic drugs.

Premature delivery occurred in 7 of the 27 pregnancies (26%) because of cardiovascular events in 4 cases (57%) and obstetric complications (threatened premature labor) in 3 cases.

When comparing the pregnancies complicated by cardiovascular events with those unaffected by such events, the NYHA class before pregnancy, and echocardiographic parameters (LVEF, LADs, MR, LVOTO, maximum wall thickness) could not be analyzed because of the small number of positive findings. HOCM or family history of HCM were not risk factors ($P=0.22$, $P=0.90$). In the current study, medication in the pre-pregnancy period and CARPREG or ZAHARA score ≥ 1 or more were identified as risk factors of cardiac events during pregnancy or postpartum (Table 5).

Discussion

A cardiovascular event related to HCM occurred in 13 of 27 pregnancies. Cardiovascular events showed 3 peak times of occurrence: early pregnancy, approximately 30 gestational weeks, and postpartum. In previous similar studies,³⁻⁸ women who were symptomatic before pregnancy and who had a family history were at risk of cardiovascular events during their

Table 5. Relation of Cardiovascular Event and ZAHARA/CARPREG Score and Pre-Pregnancy Medication in 23 Women With HCM

	Cardiovascular events	P value
HCM		
No	8/20 (40%)	NS
Yes	5/7 (71%)	
D-HCM		
No	13/27 (48%)	NS
Yes	0/0 (0%)	
Medication (pre-pregnancy)		
No	5/18 (28%)	<0.05
Yes	8/9 (88%)	
NYHA class (pre-pregnancy)		
1	12/26 (46%)	NS
≥ 2	1/1 (100%)	
LVEF <50%		
No	13/27 (48%)	NS
Yes	0/0 (0%)	
Family history		
No	9/19 (33%)	NS
Yes	4/8 (50%)	
LADs >50 mm		
No	12/26 (46%)	NS
Yes	1/1 (100%)	
MR \geq moderate		
No	12/26 (46%)	NS
Yes	1/1 (100%)	
LVOTO >50 mmHg		
No	12/26 (46%)	NS
Yes	1/1 (100%)	
Maximum wall thickness >30 mm		
No	12/26 (46%)	NS
Yes	1/1 (100%)	
High CARPREG score		
0	6/17 (35%)	<0.05
≥ 1	7/10 (70%)	
High ZAHARA score		
0	4/15 (26%)	<0.05
≥ 1	9/12 (75%)	

NS, not significant. Other abbreviations as in Table 1.

pregnancies. Our new findings are that risk factors of cardiovascular events were medication before pregnancy and higher CARPREG or ZAHARA score.

The frequency of cardiovascular events (48%) is similar to the 28–73% reported in previous studies.^{3–9} Collectively the findings show there is a high frequency of cardiovascular events in pregnancy for women with HCM. In the present study, 13 of the 18 events were related to arrhythmia, indicating that many of the cardiovascular events in pregnancy with HCM involve arrhythmia. Mostly, it was ventricular arrhythmias, including premature ventricular contraction and NSVT, and in some cases they were not controllable by medication, which is unusual. These findings indicate the importance of recognizing arrhythmia as a probable cardiovascular event in a pregnant woman with HCM.

Cardiovascular events occurred most frequently at approximately 30 gestational weeks. The increase in the circulating blood volume at 32 gestational weeks reaches 40–45% of the nonpregnant level, and it is notable that the most frequent period of cardiovascular events coincided approximately with the period of peak circulating blood volume during pregnancy. In 3 of the 4 pregnancies terminated because of a cardiovascular event, the event occurred during this period, which suggests that such cases require strict management and medication in the early stage of pregnancy.

Medication before pregnancy and higher CARPREG or ZAHARA score were risk factors for experiencing a cardiovascular event during pregnancy. However, further accumulation of cases and a study of multiple factors are required. These additional factors should include the general condition of the HCM patient, which appeared to influence the outcome in this study, and the observations from previous studies, which include an excellent perinatal prognosis in patients who are asymptomatic before pregnancy,⁵ family history,⁸ the apparent lack of influence of pregnancy on the natural course of HCM, and the tendency for a good prognosis when no symptoms are present before pregnancy.⁷ Consideration of the timing of cardiovascular events may also be included in this analysis, given our finding of a high frequency of cardiovascular events in the early stage of pregnancy, at approximately 30 gestational weeks, and postpartum. Medication in the pre-pregnancy period, and CARPREG or ZAHARA score ≥ 1 were identified as risk factors of cardiac events during pregnancy or postpartum. However, this study was a retrospective analysis with the limita-

tions of a small number of patients and the rarity of the condition.

Conclusions

If a pregnant woman with HCM has such factors as medication in the pre-pregnancy period or CARPREG or ZAHARA score ≥ 1 , careful observation for cardiovascular events is required, especially at approximately 12 and 30 weeks' gestation and also postpartum.

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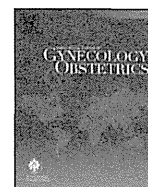


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CLINICAL ARTICLE

Safety of induced abortions at less than 12 weeks of pregnancy in Japan

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ABSTRACT

Objective: To assess the safety of various methods of induced abortion when used before 12 weeks of pregnancy in Japan. **Methods:** A retrospective study was undertaken of induced abortions conducted between January 1 and December 31, 2012. Questionnaires were sent to 4154 institutions that employed doctors who were licensed to conduct induced abortions. Information was obtained about the numbers of induced abortions performed before 12 weeks, methods, complications, and routine management. **Results:** Completed questionnaires from 2434 institutions showed that 100 851 induced abortions had been performed. Vacuum aspiration (VA) was used in 20 458 (20.3%) abortions, VA with sharp curettage in 47 148 (46.8%), dilatation and curettage (D&C) in 32 958 (32.7%), and medical abortion in 287 (0.3%). Overall, 358 complications were reported (355.0 per 100 000 procedures). The rate of complications was significantly higher after D&C than after VA and after VA with sharp curettage ($P < 0.001$ for both). However, incomplete abortion requiring repeat procedures was the only complication that was significantly associated with D&C ($P < 0.001$). **Conclusion:** D&C can be safely used for induced abortion before 12 weeks of pregnancy, but changing from D&C to VA could reduce incomplete abortions and improve the safety of induced abortions before 12 weeks of pregnancy in Japan.

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1. Introduction

After evaluation of several proposed methods for induced abortion during the first trimester, WHO has recommended the adoption of vacuum aspiration (VA) or medical methods using mifepristone and misoprostol to ensure procedures are both safe and effective [1,2]. The organization also stated that dilatation and curettage (D&C) should be replaced by VA to improve safety and quality of care for women [2]. The rationale for this guidance was based on previous studies in which D&C was found to be less safe [3], substantially slower, and associated with more blood loss [4] than was VA. Furthermore, rates of major complications are higher with D&C than VA [5].

The potential risks of D&C have been known since the 1970s [3–5]. Nevertheless, some support exists for the clinical acceptability of this procedure. Kulier et al. [6] conducted a systematic review of randomized controlled trials of different surgical methods for induced abortion during the first trimester and concluded that the incidences of complications were not markedly different between D&C and VA. The only difference observed between these two methods was the operation time, which was lower for VA than D&C. A study conducted by Niinimäki et al. [7] analyzed 42 619 induced first trimester abortions

in Finland, and showed that medical abortions were more likely to be associated with bleeding and re-evacuation than were surgical methods of induced abortion, including VA and D&C. Although surgical abortions led to injury more often than did medical abortions, the overall incidence of such injuries was rare [7]. Consequently, Niinimäki et al. concluded that both VA and D&C could be considered generally safe and clinically acceptable methods for induced abortion.

In the USA, 80% of induced abortions were performed by surgical methods in 2010 [8]; furthermore, most of the procedures since 1995 have involved VA [3]. In England and Wales in 2012, sharp curettage was no longer used, although 50% of abortions were performed by surgical methods [9]. However, D&C still remains one of the most frequently used procedures for induced abortion in Japan [10], with medical abortions using mifepristone or misoprostol not yet legally accepted. The aim of the present study was, therefore, to elucidate the safety of various methods of induced abortion used before 12 weeks of pregnancy in Japan.

2. Materials and methods

A retrospective study was undertaken of induced abortions performed before 12 weeks of pregnancy between January 1 and December 31, 2012. The Japan Association of Obstetricians and Gynecologists provided a list of hospitals that employed doctors licensed to perform induced abortions, and questionnaires were mailed on September 5, 2013, to the Departments of Obstetrics and Gynecology of 4154

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Japanese institutions (1171 hospitals and 2983 clinics). Managers of the departments were asked to complete the questionnaire. Completion and return of the study questionnaire was considered as consent to participate in the present study. Approval was obtained from the ethics committees of the coordinating center (Tama Nagayama Hospital, Nippon Medical School, Tokyo) and the Japan Association of Obstetricians and Gynecologists. The present study conformed to the principles of the Declaration of Helsinki.

The questionnaire obtained information about the number of induced abortions performed before 12 weeks of pregnancy, methods used, complications, and routine management approaches before and during the procedure. Complications were subdivided into uterine perforation, cervical injury, gross bleeding, pelvic infection requiring hospital admission, thromboembolism, anaphylaxis, incomplete abortion requiring repeat procedures, and other types of complication. Routine management approaches included preoperative examination, cervical preparation, monitoring and treatment during the procedure, and use of anesthetics. Responses were confidential and data that might reveal the identity of the patients were not requested.

Data were analyzed using SPSS version 17.0 (SPSS Inc, Chicago, IL, USA). Categorical variables were evaluated using χ^2 or Fisher exact tests with Bonferroni correction. $P < 0.05$ was considered statistically significant.

3. Results

Completed questionnaires were received from 2434 (58.6%) of the 4154 institutions, including 738 (63.0%) of the 1171 hospitals and 1696 (56.9%) of the 2983 clinics. A total of 100 851 induced abortions were performed before 12 weeks of pregnancy, of which 15 946 (15.8%) were performed in hospitals and 84 905 (84.2%) in clinics. Induced abortions had been performed at 1963 institutions, of which 543 (27.7%) were hospitals and 1420 (72.3%) clinics.

The most frequently used method to induce abortion was VA with sharp curettage, whereas medical methods were used rarely (Table 1). Blood cell count, blood group typing, and screening for infection were the most frequently performed preoperative tests (Table 2). Cervical preparation using an osmotic dilator was conducted at 1288 institutions (65.6%). Cervical preparation was performed at 445 (82.0%) hospitals and 843 (59.4%) clinics. Intravenous infusion, oxygen saturation monitoring, and automatic blood pressure monitoring were used during procedures at many institutions (Table 2). The most frequently used anesthetics were thiamylal or thiopental (Table 2).

Overall, 358 (0.4%) of the induced abortions had complications, equivalent to a total complication rate of 355.0 per 100 000 induced abortions. Among the 358 complications, 295 (82.4%) were incomplete abortions, 19 (5.3%) uterine perforations, 17 (4.7%) gross bleeding, 12 (3.4%) anaphylaxis, 3 (0.8%) pelvic infections requiring hospitalization, 2 (0.6%) cervical injuries, and 10 (2.8%) other (Table 3). No instances of thromboembolism or maternal death were recorded.

Rates of complications, and specifically incomplete abortions, were significantly higher after D&C than after VA and after VA with sharp curettage ($P < 0.001$ for all) (Table 3). The rates of complications and incomplete abortions were also higher for VA with sharp curettage than for VA alone ($P < 0.001$ for both) (Table 3). The rates of uterine perforation and gross bleeding were not significantly different among

Table 1

Methods used for induced abortion before 12 weeks of pregnancy ($n = 100\,851$).

Method	No. (%)
Vacuum aspiration	20 458 (20.3)
Vacuum aspiration with sharp curettage	47 148 (46.8)
Dilatation and curettage	32 958 (32.7)
Medical abortion	287 (0.3)

Table 2

Routine management of women undergoing induced abortion before 12 weeks of pregnancy within the 1963 participating institutions.

Management approach	No. (%)
Preoperative examination	
Blood cell count	889 (45.3)
Blood group typing	839 (42.7)
Screening for infection	733 (37.3)
Laboratory test ^a	366 (18.6)
Electrocardiograph	300 (15.3)
Blood coagulation test	192 (9.8)
Irregular antibody screening	125 (6.4)
Chest radiograph	35 (1.8)
Cervical preparation	
Yes	1288 (65.6)
No	675 (34.4)
Monitoring and treatments during the procedure	
Intravenous infusion	1770 (90.2)
Oxygen saturation monitoring	1615 (82.3)
Automatic blood pressure monitoring	1508 (76.8)
Electrocardiogram monitoring	1110 (56.5)
Ultrasound-guided procedure	777 (39.6)
Use of anesthetic	
Thiamylal or thiopental	937 (47.7)
Pentazocine	882 (44.9)
Diazepam	715 (36.4)
Ketamine	538 (27.4)
Propofol	420 (21.4)

^a Measurements of aspartate transaminase, alanine transaminase, lactate dehydrogenase, blood urea nitrogen, and creatinine.

the three surgical methods (Table 3). The rates of uterine perforation and gross bleeding were significantly lower after VA (1 in 20 458 and 2 in 20 458, respectively) than after medical abortion (0 in 287 for both; $P < 0.001$ and $P = 0.004$, respectively).

Cervical preparation was associated with increased rates of total complications and incomplete abortions (Table 4). By contrast, the use of ultrasonography during surgical abortion did not influence the rates of complications (Table 4).

4. Discussion

The present study found that sharp curettage (either as D&C or with VA) was used in 79.5% of induced abortions performed before 12 weeks of pregnancy in Japan. Nevertheless, the rates of complications were increased when this method was used, either as part of D&C or with VA. The most frequent complication overall was incomplete abortion. By contrast, other complications, including uterine perforation and gross bleeding, were rarely reported and no maternal deaths occurred.

A report published in 2007 by the Society of Family Planning [11] showed that the incidences of major complications, uterine perforation, and cervical injury associated with surgical abortion performed during the first trimester in the USA were less than 1000, 10–400, and 10–1000 per 100 000 induced abortions, respectively. The Royal College of Obstetricians and Gynaecologists in the UK investigated complications following either medical or surgical abortion during the first trimester [5]. For medical abortion, rates of uterine rupture and severe bleeding requiring transfusion were both less than 100 per 100 000 induced abortions. For surgical abortion, the rates of uterine perforation and cervical injury were 100–400 and less than 1000 per 100 000 induced abortions, respectively. Failure to end pregnancy was the most frequent complication reported overall (1000 per 100 000 induced abortions) [5,7,9,12]. Consequently, the findings of the present study regarding rates of complications were similar to previous reports.

Nonetheless, the observed rates of total complications and incomplete abortions in the present study differed according to the method of induced abortion used. The use of VA alone seemed to be associated with the lowest incidence of incomplete abortion. The reason why this method was advantageous is unclear. It is possible that clinicians

Table 3
Complications associated with each method of induced abortion.

Method	Number of procedures in which method used	Total complications			Incomplete abortion			Uterine perforation			Gross bleeding		
		No. (%)	Rate ^a	P value ^b	No. (%)	Rate ^a	P value ^b	No. (%)	Rate ^a	P value ^b	No. (%)	Rate ^a	P value ^b
Vacuum aspiration	20 458	23 (0.1)	112.4	NA	20 (0.1)	97.8	NA	1 (<0.1)	4.9	NA	2 (<0.1)	9.8	NA
Vacuum aspiration with sharp curettage	47 148	139 (0.3)	294.8	<0.001 ^c	107 (0.2)	226.9	<0.001 ^c	6 (<0.1)	12.7	0.611 ^c	9 (<0.1)	19.1	0.586 ^c
Dilatation and curettage	32 958	194 (0.6)	588.6	<0.001 ^c <0.001 ^d	166 (0.5)	503.7	<0.001 ^c <0.001 ^d	12 (<0.1)	36.4	0.047 ^c 0.028 ^d	6 (<0.1)	18.2	0.682 ^c 0.863 ^d
Medical abortion	287	2 (0.7)	696.9	0.048 ^c 0.482 ^d 0.882 ^e	2 (0.7)	696.9	0.029 ^c 0.299 ^d 0.967 ^e	0	0.0	<0.001 ^c 0.015 ^d 0.216 ^e	0	0.0	0.004 ^c 0.055 ^d 0.048 ^e
Total	100 851	358 (0.4)	355.0	NA	295 (0.3)	292.5	NA	19 (<0.1)	18.8	NA	17 (<0.1)	16.9	NA

Abbreviation: NA, not applicable.

^a Per 100 000 induced abortions performed by that method.^b For comparisons of rates.^c Versus vacuum aspiration.^d Versus vacuum aspiration with sharp curettage.^e Versus dilatation and curettage.

might tend to use sharp curettage in combination with VA for the management of technically difficult abortions, in which complications are likely irrespective of the use of sharp curettage.

Cervical preparation has been recommended when using surgical methods [5] or for high-risk patients with cervical injury and uterine perforation [2]. Both mechanical and medical cervical dilatations can shorten induced abortion procedures; however, the optimum gestational period at which cervical preparation should be performed has not yet been identified [13]. In the present study, routine cervical preparation was performed in 65.6% of all institutions. Nevertheless, use of this treatment was unexpectedly related to a high incidence of incomplete abortion. This result could reflect the fact that cervical preparation was more frequently performed in hospitals than in clinics, and women referred to hospitals from clinics could be at increased risk of incomplete abortion.

Ultrasound-guided procedures have been recommended for D&C performed after 14 weeks of pregnancy [5], but the effect of this approach during the first trimester is unclear [2]. In the present study, the routine use of ultrasonography during induced abortions conducted before 12 weeks of pregnancy did not decrease the rates of complications. Although ultrasound-guided procedures are not routinely required during the first trimester in Japan, they could be effective for some patients, such as women with multiple uterine myoma, a uterine anomaly, or a history of uterine surgery.

The use of anesthesia during surgical abortions remains controversial. Although no difference was reported in the incidences of complications between general and local anesthesia in one study [14], it has been suggested that paracervical block [2] and non-steroidal anti-inflammatory drugs [5] should be used instead of general anesthesia during routine procedures because of quick recovery and low cost. In

the present study, general anesthesia was widely used for first trimester abortions. However, intravenous infusion, electrocardiogram monitoring, automatic blood pressure monitoring, and oxygen saturation monitoring were also frequently used during surgical methods performed under general anesthesia. These treatments and monitoring methods are postulated to have effectively prevented adverse effects related to general anesthesia.

The main limitations of the present study were the retrospective design and the fact that the data were collected using questionnaires, which were completed by only 58.6% of the institutions that were invited to participate. Furthermore, the effects of cervical dilatation and ultrasound-guided procedures on prevention of complications were not analyzed for each patient because individual medical records were not obtained.

Furthermore, the legal and social context of induced abortion differs among countries. Mifepristone and misoprostol are not currently available for induced abortion in Japan; however, surgical procedures can be provided with general anesthesia and sufficient monitoring of vital signs. A total of 287 medical abortions were reported in the present study, but the medication used was not asked. In regions where medical abortion using mifepristone and misoprostol is available, it is possible that this method has advantages over surgical abortion in terms of accessibility, safety, and cost-effectiveness.

In conclusion, although D&C was used in almost one-third of induced abortions conducted at less than 12 weeks of gestation in Japan, the incidence of total complications was comparable to that in other high-income countries that predominantly use VA and medical methods. However, use of VA rather than D&C could decrease the incidence of incomplete abortions, the need for repeat procedures, and further improve the safety of early abortions.

Table 4
Association between complications of induced abortion and routine management.^a

Management approach	Institutions (n = 1963)	Induced abortions (n = 100 851)	Total complications (n = 358)			Incomplete abortion (n = 295)			Uterine perforation (n = 19)			Gross bleeding (n = 17)		
			No. (%)	Rate ^b	P value ^c	No.	Rate ^b	P value ^c	No. (%)	Rate ^b	P value ^c	No. (%)	Rate ^b	P value ^c
Cervical preparation														
Yes	1288 (65.6)	58 321 (57.8)	238 (66.5)	408.1	<0.001	189 (64.1)	324.1	0.032	15 (78.9)	25.7	0.103	13 (76.5)	22.3	0.19
No	675 (34.4)	42 530 (42.2)	120 (33.5)	282.2		106 (35.9)	249.2		4 (21.1)	9.4		4 (23.5)	9.4	
Ultrasound-guided procedure														
Yes	777 (39.6)	42 930 (42.6)	140 (39.1)	326.1	0.185	116 (39.3)	270.2	0.246	7 (36.8)	16.3	0.614	8 (47.1)	18.6	0.90
No	1186 (60.4)	57 921 (57.4)	218 (60.9)	376.4		179 (60.7)	309.0		12 (63.2)	20.7		9 (52.9)	15.5	

^a Values given as number (percentage) unless indicated otherwise.^b Per 100 000 induced abortions with that management approach.^c For comparisons of rates.

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Conflict of interest

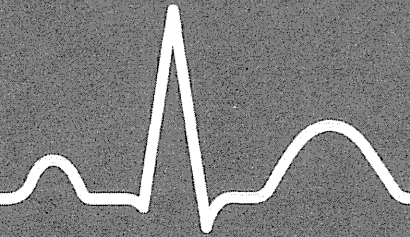
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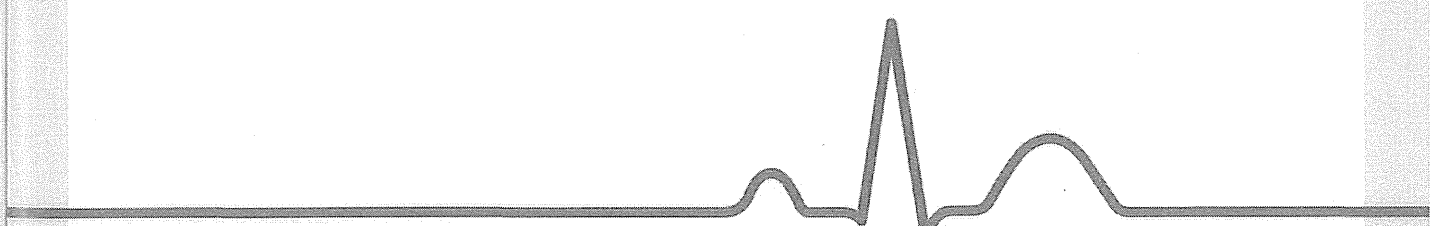


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編集 関沢明彦 長谷川潤一

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巻頭言

妊産婦死亡率は、国の保健や医療レベルを比較するための指標としてしばしば利用されています。以前から、わが国の妊産婦死亡率が、先進諸国の中で高い部類にあることが問題となっていました。30年前の1985(昭和60)年に、10万出生対15.8であり、米国の7.8、英国の7.0の倍以上でした。この時期は、政府が周産期医療整備対策事業として、地域ごとに周産期母子医療センターを設立し、地域の1次・2次施設と連携する周産期の病診連携を整えた頃です(1986(昭和61)年)。もともと先進諸國中、最も低かった周産期死亡率と新生児死亡率はさらに改善し、現在でも世界のトップを独走しています。このこととは対比的に、妊産婦死亡率の減少は緩慢でした。「周産期母子医療センター構想」は、低出生体重児をはじめとする病的新生児の医療には効果的であったのですが、母体安全に対してはウイークポイントをもっていたのです。

このことが露呈したのが、2006(平成18)年の奈良県町立大淀病院と、その2年後2008(平成20)年に起こった東京都立墨東病院での妊娠中の脳出血例による妊産婦死亡でした。母体に起こった一般救急症に直ちに対応ができなかったことは、完備されたと思われていた周産期医療システムのウイークポイントをついた出来事だったのです。

2006(平成18)年から、日本産婦人科医会の多大な協力を得て、われわれ厚生労働研究班は、「わが国の妊産婦死亡の調査と評価に関するモデル事業」として、第3者による症例検討会を開始しました。その目的は、死因を究明することによって、今後の再発予防に役立て、周産期医療の安全性を向上させるためです。妊娠中や分娩後にお亡くなりになった方の死因を究明することは、今後の周産期医療の治療やシステムを改善するために、きわめて重要なことです。2004(平成16)年に、福島県で帝王切開中に亡くなられた癒着胎盤の事例は、産婦人科医師が業務上過失致死罪と医師法違反で逮捕されたことによって、医学会のみでなく国民の大きな関心を引きました。この例をきっかけに、日本産科婦人科学会と日本産婦人科医会を中心とした学術団体では、学会テーマとして「癒着胎盤」を取り上げ、より良い治療法の開発や周産期医療体制改善に関する研究発表の機会が多く設定されました。その結果、それ以後2012年まで癒着胎盤による直接的な出血死が、本研究班が把握する限り1例も発生していません。このことは、残念ながらお亡くなりになった方の死因を明らかにすることで、今後の医療や医療システムの改善につなげることが可能なことを示す事柄だと思えます。

「日本の妊産婦の生命を救うために2015」は、これまで5年間の妊産婦死亡症例検討評価委員会の活動とともに、母体の安全性を高めるための提言をまとめたものです。毎年、「母体安全への提言」として5～6項目の提言を発信してきましたが、本書はより網羅的な内容となっています。著者は、実際に症例検討評価を行っている医師にお願いしました。一人でも多くの方が、安全に次世代を生み育むことができる周産期医療体制を整備していくために、本書がお役にたてばと思います。

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池田智明

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