European Journal of Obstetrics & Gynecology and Reproductive Biology 246 (2020) 169–176

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Full length article

Management of very early medical abortion—An international survey among providers

Christian Fiala[a,h,*], Teresa Bombas[b], Mirella Parachini[c], Aubert Agostini[d], Roberto Lertxundi[e], Marek Lubusky[f], Laurence Saya[g], Kristina Gemzell Danielsson[h]

[a] Gynmed Clinic, Vienna, Austria
[b] Obstetric Service A, Centro Hospitalar e Universitário de Coimbra, Portugal
[c] San Filippo Neri Hospital, Rome, Italy
[d] Obstetric and Gynecology Department, La Conception Hospital, Marseille, France
[e] Clinica Euskalduna, Bilbao, Spain
[f] Department of Obstetrics and Gynaecology, Palacky University Hospital, Czech Republic
[g] Altius Pharma CS, Paris, France
[h] Department of Women's and Children's Health, Division of Obstetrics and Gynaecology, Karolinska Institutet and Karolinska University Hospital, Stockholm, Sweden

ARTICLE INFO

Article history:
Received 14 July 2019
Received in revised form 14 January 2020
Accepted 20 January 2020
Available online xxx

Keywords:
Very early medical abortion
Health care providers
Survey

ABSTRACT

Objective: To record the definition and management of Very Early Medical Abortion (VEMA) in different countries.
Study design: An Internet survey was circulated internationally among providers of medical abortion via a website. The questionnaire focused on reasons for performing or delaying medical abortion at a very early gestational age and the perceived advantages and disadvantages of VEMA.
Results: Out of 220 completed questionnaires, 50 % came from European abortion providers (n = 110). Most respondents (72 %) defined VEMA as abortion performed in the presence of a positive hCG pregnancy test but with an empty uterine cavity or a gestational sac-like structure, and no signs or symptoms of ectopic pregnancy. A total of 74 % of respondents thought it was not necessary to wait for a diagnosis of intrauterine pregnancy before starting medical abortion. Equally, 74 % were aware of the possibility of an ectopic pregnancy.
Conclusion: According to European providers of medical abortion, waiting for the diagnosis of an intrauterine pregnancy is not necessary and does not improve treatment of ectopic pregnancy. Providers should know that medical abortion can be performed effectively and safely as soon as the woman has decided. There is no lower gestational age limit.

Introduction

The definition and management of Very Early Medical Abortion (VEMA) vary widely from country to country. In many settings, medical abortion is delayed by the health care provider or by local regulations until a specific pregnancy duration is reached or until an intrauterine pregnancy (IUP) is confirmed by ultrasound. This increases the waiting time for women and may also increase side effects and the risk of complications.

Previous studies have showed a possible higher failure rate for medical abortion in very early pregnancies [1–3], compared to abortion later in the first trimester. However, a 2017 study by Bizjak et al. [4] demonstrated that efficacy and safety are the same. Further, the study underlined the advantages of beginning the medical abortion treatment as early as possible.

The objective of the present study was to collect more information on the management of very early medical abortion in different European countries via a survey.

Methods

A questionnaire was developed by a group of medical abortion providers from seven European countries. A total of 431 health care providers offering medical abortion worldwide were invited to complete the survey via an email to FIAPAC members (International Federation of Professional Abortion and Contraception Associates).

The questionnaire asked about the providers' service and practice, and their management of VEMA. It was a multiple-choice

* Corresponding author at: Gynmed Clinic, Vienna, Austria.
E-mail address: christian.fiala@aon.at (C. Fiala).

https://doi.org/10.1016/j.ejogrb.2020.01.022
0301-2115/

questionnaire with 20 questions (Appendix 1 in Supplementary material). The questionnaire was completed online and was accessible for three months on a FIAPAC dedicated website, from May to August 2018. It was a self-administered anonymous survey.

Statistical analyses were performed on the analysis population, i.e. respondents with a clinical practice during 2017. These analyses provided the number and percentage of the different response modalities for the qualitative variables. All summaries and statistical analyses were generated using Statistical Analysis Software (SAS®) version 9.3.

Results

Of the 431 providers invited by email to complete the survey, 227 completed the questionnaires (53 %). Of those, 7 (3 %) were excluded from evaluation – 4 because the respondents were not directly involved in clinical care of patients, and 3 because they had not practiced during 2017.

The analysis was based on the remaining 220 completed questionnaires.

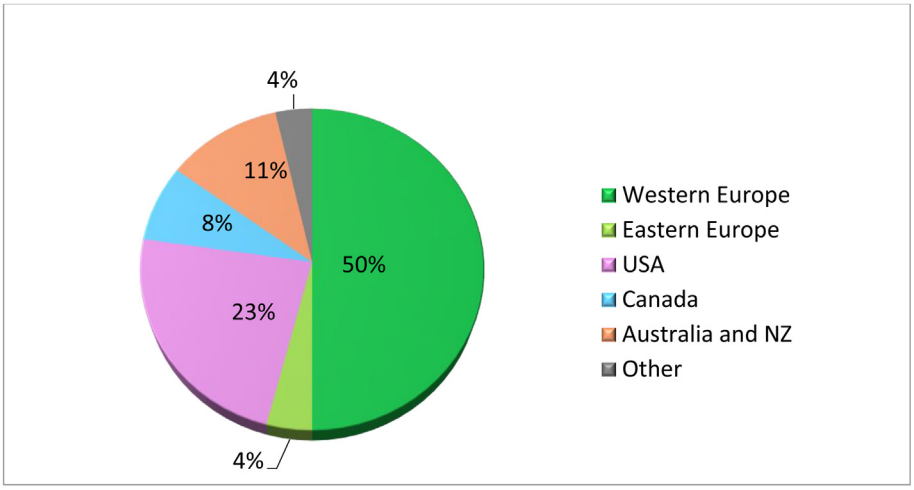
Respondents

Half of the respondents were from European countries (n = 110, 50 %), 23 % (n = 51) were from the US, 11 % (n = 25) from Australia and New Zealand, and the rest from other parts of the world (Fig. 1).

The majority of respondents were women (n = 163, 74 %), were between 40 and 60 years old (n = 127, 58 %), and were physicians (n = 195, 89 %). Most respondents had over 10 years' experience (n = 145, 66 %), and had treated more than 100 women for first-trimester medical abortion during 2017 (n = 127, 58 %) (Table1).

VEMA definition

Most respondents (n = 159, 72 %), defined VEMA as abortion in the presence of a positive hCG pregnancy test but with an empty



Region	Country	n	%	Region	Country	n	%
Western Europe	Austria	6	2.7	**Eastern Europe**	Bulgaria	1	0.5
	Belgium	7	3.2		Czechia	1	0.5
	Denmark	6	2.7		Kazakhstan	1	0.5
	Finland	2	0.9		Moldova	1	0.5
	France	24	10.9		Slovenia	4	1.8
	Germany	15	6.8		Ukraine	1	0.5
	Greece	1	0.5		***Total***	***9***	***4.1***
	Italy	4	1.8				
	Netherlands	9	4.1	**Australia and New Zealand**	Australia	15	6.8
	Norway	2	0.9		New Zealand	10	4.5
	Portugal	5	2.3		***Total***	***25***	***11.4***
	Spain	3	1.4				
	Sweden	7	3.2	**Other**	Colombia	1	0.5
	Switzerland	9	4.1		Curaçao	3	1.4
	UK	10	4.5		French Guiana	1	0.5
	Total	***110***	***50.0***		Pakistan	1	0.5
					Tunisia	1	0.5
USA	***Total***	***51***	***23.2***		***Total***	***8***	***3.6***
Canada	***Total***	***17***	***7.7***				

Fig. 1. Geographical distribution of respondents.

Table 1
Characteristics of respondents.

		N = 220	%
Age	<40 years	41	18.6
	40–60 years	127	57.7
	>60 years	52	23.6
Practitioner	Obstetrician/Gynaecologist	117	53.2
	General Practitioner (GP)	61	27.7
	Midwives, nurses, counsellors	18	8.2
Place of practice	Public hospital	68	30.9
	Private hospital	9	4.1
	Abortion centre	69	31.4
	Office-based gynaecologist	28	12.7
	GP practice	27	12.3
Experience	<10 years	75	34.1
	10–20 years	92	41.8
	>20 years	53	24.1
Number of women treated with medical abortion in 2017	<50	52	23.6
	50–100	38	17.3
	>100	127	57.7

uterine cavity or a gestational sac-like structure, and no signs or symptoms of ectopic pregnancy.

Specific considerations for VEMA

Most respondents (n = 196, 89 %) indicated that specific considerations are associated with VEMA (Fig. 2). Most also recognized the possibility of an extrauterine pregnancy (74 %, n = 146) and the need to counsel patients accordingly (80 %, n = 157) (Fig. 2).

A total of 146 (74 %) respondents did not think necessary to wait for a diagnosis of intrauterine pregnancy (IUP) before starting medical abortion; However, huge discrepancies were apparent between regions (29 %–82 %) and place of practice (56 %–92 %) (Table 2). A majority (85 %, n = 166) of respondents thought that medical abortion is not less effective at a very early gestation (Table 2).

VEMA epidemiology

Nearly all (93 %, n = 205) respondents worked in places where women request abortion at a very early stage, i.e., before 5 weeks of amenorrhea. An increase in requests over the last few years was reported by 61 % of respondents (n = 135) (Table 3).

VEMA management

Over half of respondents (57 %, n = 125) said they begin the very early abortion treatment immediately (without confirming IUP) if the woman has decided. Some (30 %, n = 67) delay the abortion for 1 or 2 weeks (Fig. 3). Respondents from Canada were most likely to say they treat immediately (82 %, n = 14). The rates for immediate treatment were 22 % for Eastern Europe (n = 2), 52 % for Western Europe (n = 57), 56 % for Australia and New Zealand (n = 14), and 69 % for the USA (n = 35).

Most providers who delayed the procedure (66 %, n = 120) cited the need to confirm an IUP to exclude an extrauterine pregnancy (Fig. 4).

Existing guidelines

For 63 % of respondents (n = 138), local or regional clinical guidelines exist for VEMA. Most of these guidelines (62 %, n = 86) recommend immediate treatment when the woman requests an abortion (Fig. 5).

Lower gestational age limit for abortions

Most respondents (58 %, n = 127) reported no lower gestational age limit and would provide abortion as soon as a positive pregnancy test is done and the woman requests abortion. The remaining abortion providers either cited a lower gestational age limit – 5 weeks of amenorrhea for 32 respondents (14 %), 6 weeks of amenorrhea for 7 respondents (3 %) – or the need for additional hCG testing or an ultrasound confirming an IUP before starting treatment.

Discrepancies appeared between regions, with 77 % of respondents from Canada having no lower gestational limit while that was the case for only 33 % of respondents from Eastern Europe, 48 % of respondents from Australia and New Zealand, 55 % of respondents from Western Europe, and 67 % of respondents from the USA.

Advantages and disadvantages of VEMA

Almost all respondents cited several advantages with VEMA (95 %, n = 209), mainly the decreased waiting time for abortion (79 %, n = 166) (Fig. 6), and VEMA was considered less painful for women by almost half of respondents (49 %, n = 102) (Table 4).

Most respondents also cited disadvantages with VEMA (79 %, n = 175), such as the possibility of unnecessary treatment in case of ectopic pregnancy (62 %, n = 109) (Fig. 7). On the other hand, 90 % of respondents consider that women have enough time to make the decision in case of VEMA.

VEMA and ectopic pregnancy

A total of 74 % of respondents (n = 164) thought that delaying medical abortion has no benefit for treating ectopic pregnancy, and 60 % (n = 132)

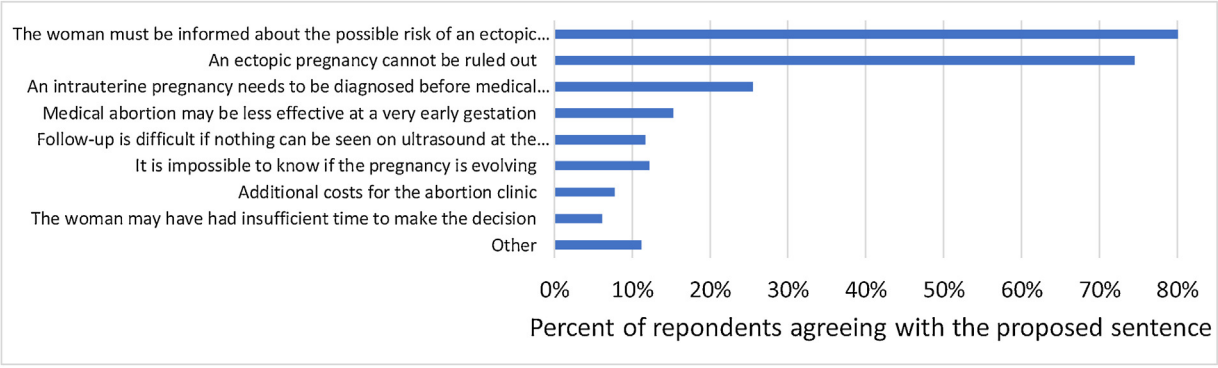


Fig. 2. Specific considerations associated with VEMA.

Table 2
Specific considerations concerning VEMA according to subpopulations.

		No need for diagnosed IUP before start of medical abortion		Medical abortion not less effective at very early gestation	
		N = 196	%	N = 196	%
Total		146	74.5	166	84.7
Region	Western Europe (n = 93)	68	73.1	81	87.1
	Eastern Europe (n = 7)	2	28.6	4	57.1
	USA (n = 48)	39	81.3	40	83.3
	Canada (n = 17)	14	82.4	13	76.5
	Australia & New Zealand (n = 25)	19	76.0	23	92.0
	Other (n = 6)	4	66.7	5	83.3
Place of practice	Public hospital (n = 61)	45	73.8	54	88.5
	Private hospital (n = 9)	5	55.6	7	77.8
	Abortion centre (n = 64)	48	75.0	56	87.5
	Office-based gynaecologist (n = 21)	14	66.7	18	85.7
	GP practice (n = 24)	22	91.7	17	70.8
	Other (n = 17)	12	70.6	14	82.4
Experience	<10 years (n = 72)	56	77.8	57	79.2
	10-20 years (n = 79)	55	89.6	67	84.8
	>10 years (n = 45)	35	77.8	42	93.3

Table 3
VEMA epidemiology.

		Women requesting abortion at very early stage		Increased demand over the last few years	
		N = 220	%	N = 220	%
Total		205	93.2	135	61.4
Region	Western Europe (n = 110)	101	91.8	62	56.4
	Eastern Europe (n = 9)	6	66.7	2	22.2
	USA (n = 51)	51	100	35	68.6
	Canada (n = 17)	17	100	15	88.2
	Australia & New Zealand (n = 25)	22	88.0	15	60.0
	Other (n = 8)	8	100	6	75.0
Place of practice	Public hospital (n = 68)	56	82.4	37	54.4
	Private hospital (n = 9)	8	88.9	4	44.4
	Abortion centre (n = 69)	69	100	52	75.4
	Office-based gynaecologist (n = 28)	28	100	13	46.4
	GP practice (n = 27)	25	92.6	18	66.7
	Other (n = 19)	19	100	11	57.9

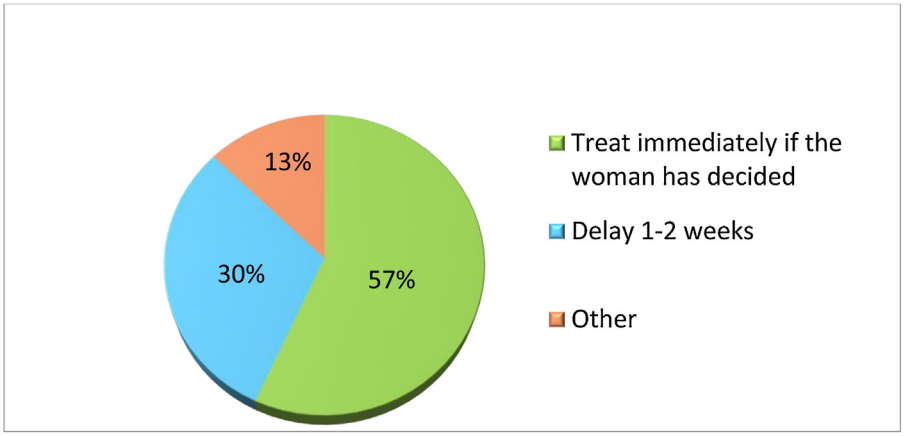


Fig. 3. Management of requests for abortion in very early pregnancies with unknown location.

said that medical abortion care helps diagnose an ectopic pregnancy earlier because the patient is under medical supervision.

Discussion

Findings and interpretation

Over 70 % of respondents correctly defined VEMA as an abortion in the presence of a positive hCG pregnancy test but with an empty uterine cavity or a gestational sac-like structure, and no signs or symptoms of ectopic pregnancy. This follows the definition proposed by Barnhart et al. for unconfirmed IUP [5].

Nearly 75 % of abortion providers do not wait for a diagnosis of IUP, and just over half (57 %) offer VEMA immediately if the woman has decided, while 30 % delay the abortion for 1 or 2 weeks. The main reason to delay treatment was the perceived need to confirm an IUP before starting treatment. A systematic control 7–10 days

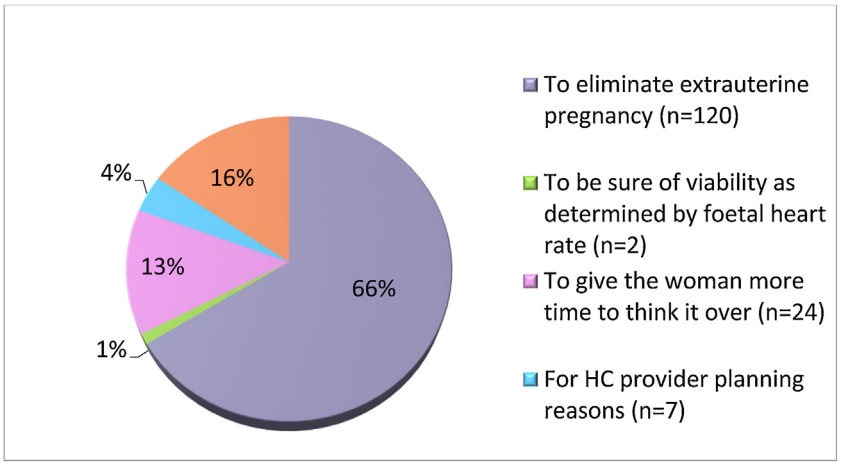


Fig. 4. Reasons for a potential delay in the procedure.

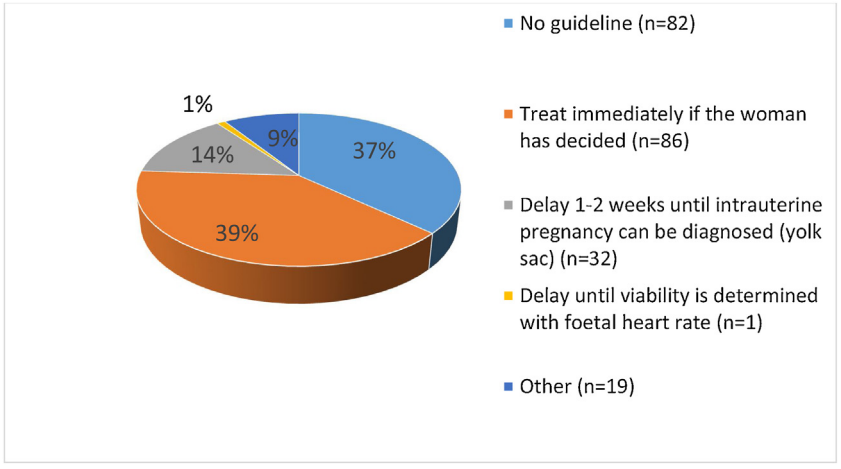


Fig. 5. Guidelines recommendations.

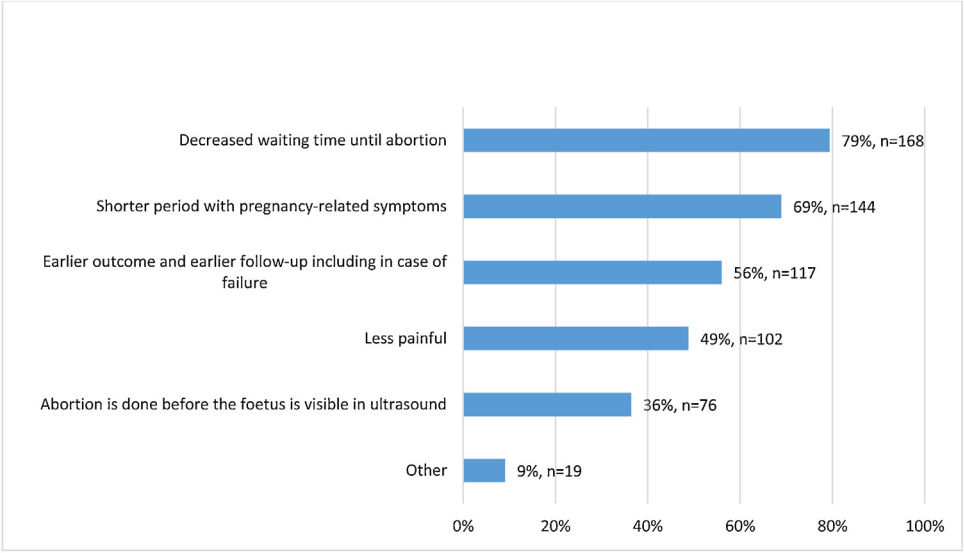


Fig. 6. Advantages for women having very early abortion.
Possibility of multiple answers.

Table 4
VEMA considered as less painful for women by health care providers.

		N = 209	%
Total		102	48.8
Region	Western Europe (n = 105)	62	59.0
	Eastern Europe (n = 7)	5	71.4
	USA (n = 50)	15	30.0
	Canada (n = 15)	4	26.7
	Australia & New Zealand (n = 25)	15	60.0
	Other (n = 7)	1	14.3
Gender	Men (n = 54)	29	53.7
	Women (n = 155)	73	47.1
Age	<40 years (n = 39)	17	43.6
	40-60 years (n = 120)	63	52.5
	>60 years (n = 50)	22	44.0
Practitioner	Obstetrician/Gynaecologist (n = 110)	59	53.6
	General Practitioner (n = 57)	27	47.4
	Midwives, nurses, counsellors (n = 18)	7	38.9
	Other physician (n = 17)	7	41.2
	Other (n = 7)	2	28.6
Place of practice	Public hospital (n = 63)	35	55.6
	Private hospital (n = 9)	5	55.6
	Abortion centre (n = 66)	25	37.9
	Office-based gynaecologist (n = 27)	15	55.6
	GP practice (n = 25)	15	60.0
	Other (n = 19)	7	36.8
Experience	<10 years (n = 71)	31	43.7
	10-20 years (n = 86)	45	52.3
	>20 years (n = 62)	26	50.0
Number women treated during the previous year	<50 (n = 47)	24	51.1
	50–100 (n = 36)	14	38.9
	>100 (n = 123)	62	50.4

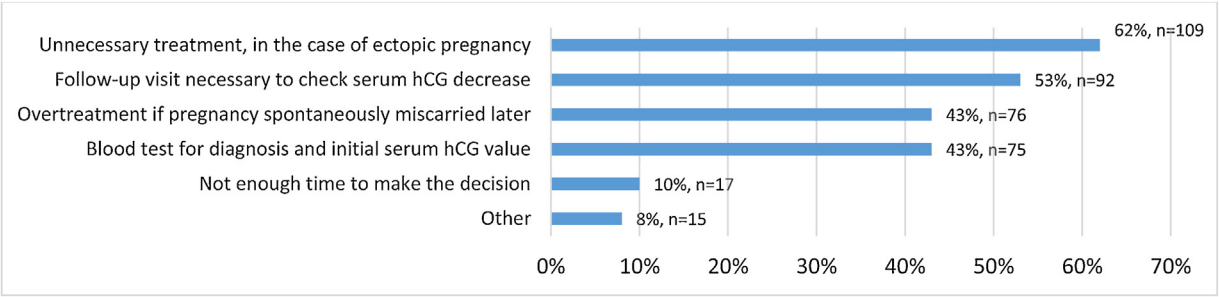


Fig. 7. Disadvantages for women having very early abortion.
Possibility of multiple answers.

after VEMA could be considered to exclude any ongoing ectopic pregnancy.

Taking into account that VEMA is a relatively new option, it is a strong confirmation of evidence-based medicine that the majority of health care professionals (HCPs) agree on the definition and offer this option to their patients. At the same time, continued educational efforts are needed to inform remaining HCPs that patients are better served by not unnecessarily delaying a treatment they need.

Over 90 % of respondents see women coming to their service requesting abortion before 5 weeks of amenorrhea, and over half of respondents have seen an increase in requests over time. This is in line with a decrease in gestational age at time of abortion over the last few years in different countries. In Sweden, the rate of medical abortions performed at or below 8 weeks increased from 43 % of all abortions in 1985 to 66 % in 2000 and 84 % in 2017 [6]. In Scotland, the proportion of medical abortions below 10 weeks was 29.5 % in 1968 and nearly 80 % in 2017 [7]. In the UK, it was 68 % in 2006 and 81 % in 2016 [8], while in Holland, the rate before 8 weeks in 2013 was 52 % in private practice and 42 % in hospitals, versus 54 % and 44 % in 2016 [9]. In Italy, the rate of abortion before 8 weeks increased from 43 % in 2000 to 49 % in 2017 [10].

A recent US survey among first-trimester abortion patients looked at characteristics that decreased the likelihood of obtaining a very early abortion (which was defined as six weeks gestation or earlier). These characteristics included being under the age of 20, relying on financial assistance to pay for the procedure, recent exposure to two or more disruptive events, and living in a state that requires in-person counselling 24–72 h prior to the procedure. Having a college degree and early recognition of pregnancy increased the likelihood of obtaining a very early abortion [11]. In the US, the proportion of abortions that were performed at or before six weeks gestation increased from 18 % in 1997 to 35 % in 2012 [11].

For 85 % of respondents, VEMA was not considered less effective than later first-trimester abortion with confirmed IUP. Previous studies have been inconsistent on the efficacy of VEMA. A pilot study [1] and a retrospective observational study [3] found a higher incidence of failure in VEMA, and a case-control study indicated the possibility of a higher failure rate in gestations under

7 weeks [2]. However, a review of 6 randomized controlled trials and 9 prospective but not comparative studies supported the use of VEMA at gestational ages <42 days with high efficacy rates overall, similar to those observed during the 7th week of pregnancy [12]. In addition, a recent retrospective study of efficacy and safety of VEMA found no significant differences in the success rate (number of ongoing pregnancies) of the unconfirmed IUP group vs the confirmed IUP group [4]. However, there was a significantly lower rate of medical and surgical interventions for incomplete abortion in the VEMA group [4].

VEMA was considered less painful for women by 49 % of respondents, which is in line with findings from several clinical studies showing an increased risk of pain or of analgesics use with increased gestational age [13–16]. Only 27 % of Canadian respondents agreed, but this low rate is probably due to the very recent introduction of the mifepristone/misoprostol protocol in Canada (in Jan. 2017). Prior to that, medical abortion was widely practiced using methotrexate, which is significantly more painful irrespective of gestational age.

Overall, some discrepancies were observed between different areas, especially between Eastern Europe and other regions. This can be explained by a briefer experience with medical abortion in Eastern Europe because mifepristone was introduced much later than in most Western European countries. However, only a few respondents were from these countries, so the corresponding data should be analysed with caution.

Strengths and weaknesses

The survey was sent out via the only international association of HCPs providing medical abortion. Therefore, coverage of the target group was very good and participants came from all over the world. One weakness was the low number of respondents from Eastern Europe (n = 9).

Similarities and differences in relation to other studies

To our knowledge, this is the first survey about VEMA conducted among health care professionals.

Open questions and future research

Future prospective studies assessing efficacy and pain in VEMA should be done to increase knowledge in this area and provide evidence-based data. Strategies need to be developed to better inform HCPs and women about the VEMA option.

Conclusion

Most abortion providers (74 %) do not find it necessary to wait for the diagnosis of an intrauterine pregnancy before starting medical abortion. However, the same percentage of providers is aware that an ectopic pregnancy cannot be ruled out along with the subsequent need to counsel patients accordingly. A majority (74 %) also thought that delaying medical abortion has no advantage in case of an ectopic pregnancy. Consequently, there was no lower gestational age limit to provide medical abortion for 58 % of providers.

The remaining providers should be informed of the available evidence that medical abortion can be performed effectively and safely as soon as a pregnant woman has decided on an abortion, even in very early pregnancy.

Funding source

This work was funded by Exelgyn, Paris, France.

Declaration of Competing Interest

The authors were all members of the external scientific advisory board of Exelgyn at the time of this study. Christian Fiala has served on an *ad hoc* basis as an invited lecturer for Exelgyn. Aubert Agostini is a board member at Nordic Pharma and MSD, and an investigator for some Nordic Pharma studies. Teresa Bombas is a member of advisory boards for Merck and HRA, has an occasional consultancy relationship with Exelgyn and Nordic, and is a speaker at conferences/symposiums organized by Bayer, Merck, HRA, Gedeon, and Exelgyn. Roberto Lertxundi has a financial relationship (member of advisory boards, lecturer, and/or consultant) with Exelgyn, Nordic-Pharma, Exeltis, Bayer-Pharma, and Teva. Marek Lubusky has an occasional consultancy relationship with Exelgyn and Nordic. Mirella Parachini has an occasional consultancy relationship with Exelgyn and Nordic. Kristina Gemzell-Danielsson has served on an *ad hoc* basis as an invited lecturer for Exelgyn, Line Pharma, and Gynuity, and as an investigator in clinical trials conducted by Concept Foundation/SunPharma. Laurence Saya is an employee of Altius Pharma CS, and as such was indirectly paid by Exelgyn for help in medical writing.

Acknowledgments

The authors want to thank Catherine Delva of Sylia Stat, France, for statistical analyses, and Joyce Arthur, Executive Director of the Abortion Rights Coalition of Canada, for her contribution in the revision of this work.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.ejogrb.2020.01.022.

References

[1] Schaff EA, Fielding SL, Eisinger S, Stadalius L. Mifepristone and misoprostol for early abortion when no gestational sac is present. Contraception 2001;63:251–4.
[2] Jackson AV, Dayananda I, Fortin JM, Fitzmaurice G, Goldberg AB. Can women accurately assess the outcome of medical abortion based on symptoms alone? Contraception 2012;85:192–7.
[3] Goldstone P, Michelson J, Williamson E. Effectiveness of early medical abortion using low-dose mifepristone and buccal misoprostol in women with no defined intrauterine gestational sac. Contraception 2013;87:855–8.
[4] Bizjak I, Fiala C, Berggren L, Hognert H, Sääv I, Bring J, et al. Efficacy and safety of very early medical termination of pregnancy: a cohort study. BJOG 2017;124:1993–9.
[5] Barnhart K, van Mello NM, Bourne T, et al. Pregnancy of unknown location: a consensus statement of nomenclature, definitions, and outcome. Fertil Steril 2011;95:857–66.
[6] Socialstyrelsn. Abortion statistics. Accessed on 8th April 2019 at http://www.socialstyrelsen.se/statistics/statisticaldatabase/abortionstatistics.
[7] National Services Scotland. Termination of pregnancy. Year ending December 2017. Published in May 2018. Accessed on 8th April 2019 at https://www.isdscotland.org/Health-Topics/Sexual-Health/Publications/2018-05-29/2018-05-29-Terminations-2017-Report.pdf.
[8] Department of Health. National Statistics. Abortion statistics, England and Wales: 2016. Summary information from the abortion notification forms returned to the Chief Medical Officers of England and Wales. October 2017. Accessed on 8th April 2019 at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/763174/2017-abortion-statistics-for-england-and-wales-revised.pdf.
[9] Inspectie Gezondheidszorg en Jeugd. Ministerie van Volksgezondheid, Welzijn en Sport. Jarrapportage 2016 van de Wet afbreking zwangerschap. January 2018. Accessed on 8th April 2019 at https://www.rijksoverheid.nl/documenten/rapporten/2018/01/17/gezond-vertrouwen-jaarrapportage-2016-van-de-wet-afbreking-zwangerschap.
[10] Ministero della Salute. Aborto. Accessed on 23rd April 2019 at http://www.salute.gov.it/portale/news/p3_2_0.jsp?lingua=italiano&id=972.
[11] Jones RK, Jerman J. Characteristics and circumstances of U.S. women who obtain very early and second-trimester abortions. PLoS One 2017;12(1) e0169969, doi:http://dx.doi.org/10.1371/journal.pone.0169969.
[12] Kapp N, Bladwin MK, Rodriguez MI. Efficacy of medical abortion prior to 6 gestational wees: a systematic review. Contraception 2018;97:90–9.

[13] Westhoff C, Dasmahapatra R, Schaff E. Analgesia during at-home use of misoprostol as part of a medical abortion regimen. Contraception 2000;62:311–4 (a).
[14] Westhoff C, Dasmahapatra R, Winikoff B, Clarke S. Predictors of analgesia use during supervised medical abortion. Contraception 2000;61:225–9 (b).
[15] Teal SB, Dempsey-Fanning A, Westhoff C. Predictors of acceptability of medication abortion. Contraception 2007;75:224–9.
[16] Suhonen S, Tikka M, Kivinen S, Kauppila T. Pain during medical abortion: predicting factors from gynecologic history and medical staff evaluation of severity. Contraception 2011;83:357–61.