UNIVERSITEIT GENT

FACULTEIT GENEESKUNDE EN GEZONDHEIDSWETENSCHAPPEN

Academiejaar 2016 – 2017

Hysteroscopy in Flanders and the Netherlands

Steffi VAN WESSEL

Promotor 1: Dr. Hamerlynck

Promotor 2: Prof. Dr. Weyers

Promotor 3: Prof. Dr. Schoot

Masterproef voorgedragen in de master in de specialistische geneeskunde
Gynaecologie – Verloskunde

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Voorwoord

Met veel plezier en enthousiasme werd aan deze masterproef gewerkt om een bijdrage te leveren aan het doctoraatsproject “nieuwe inzichten in de hysteroscopische behandeling van intra-uteriene afwijkingen” van Dr. Hamerlynck.

In mijn opleiding geneeskunde werd mijn masterproef reeds begeleid door hetzelfde onderzoeksteam. Een leerrijke periode waarin we onder andere onderzoek deden naar het effect van het type myomectomie op de fertiliteit. De toon was gezet en het was fijn om met datzelfde team een nieuwe uitdaging aan te gaan.

Een uitdaging is het zeker geworden waarbij het geduld op de proef werd gesteld toen we omwille van administratieve redenen moesten wachten om de enquête te verzenden maar ook bij het uitvoeren van de statistiek.

Graag wil ik dan ook Dr. Ellen Deschepper bedanken voor haar inzichten inzake statistiek alsook voor haar geduld op maandagnamiddag.

In het bijzonder wil ik Dr. Hamerlynck bedanken voor de fijne samenwerking. Haar enthousiasme en toewijding zijn onuitputtelijk en zijn een bron van motivatie en doorzetting.

Tevens een bedanking aan Prof. Dr. Weyers en Prof. Dr. Schoot voor de adviezen wanneer we op problemen stuitten alsook voor de tips en aanvullingen.

Last but not least een hele grote “dank u wel” aan alle deelnemers van de enquête ! We zijn ons bewust van de tijdsbesteding die deze enquête vroeg maar dankzij jullie is deze masterproef geworden wat het is.

Steffi van Wessel, mei 2017

Inhoudstafel

Abstract

Objective:

Inventorise the current ideas on hysteroscopy and the hysteroscopic practices.

Design:

Electronic survey.

Setting:

The Netherlands and Flanders.

Population or Sample:

Practising gynaecologist members of the Dutch and Flemish Society of Obstetrics and Gynaecology.

Main Outcome Measures:

The current ideas on hysteroscopy for diagnosis and treatment of intrauterine pathology and abnormal uterine bleeding amongst all responding gynaecologists. Preferences regarding hysteroscopic procedures, preparation, setting and anaesthesia, as well as types and numbers of procedures performed and instrumentation used in the office and operating room by responding hysteroscopists.

Results:

The response rate for the Netherlands was 15.4% (91/591), and for Flanders 27.0% (158/586). Responding gynaecologists have a preference for hysteroscopy in both the diagnosis and treatment of most, but not all, intrauterine pathology. Still, Flemish gynaecologists are more hesitant in opting for hysteroscopy instead of curettage for treatment of polyps and placental remnants.

There appears to be a large diffusion of diagnostic and basic hysteroscopic procedures.
In contrast to Flanders, responding gynaecologists in the Netherlands more often dispose of an office setting and perform office hysteroscopic procedures.

Hysteroscopy, and office hysteroscopy in particular, is now taught during residency in teaching hospitals, so that less experienced gynaecologists develop a preference for this technique.

Conclusions:

Our survey confirms that nowadays, in treating intrauterine pathology the focus is on less invasive or harmful techniques and preservation of the uterus. Responding hysteroscopists from the Netherlands have more expertise concerning office hysteroscopy than their Flemish colleagues. Further research both highlighting the financial benefit of office hysteroscopy and optimising patient comfort during office procedures are needed to support its further implementation.

Keywords:

Hysteroscopy
Diffusion
Implementation

Introduction

To date, diagnostic and surgical minimally invasive techniques are increasingly popular. These less invasive techniques, lead to smaller scars, a lower patient discomfort and shorter hospital stay. In gynaecology, hysteroscopy can help in diagnosing intrauterine pathology and is the golden standard for treatment[1, 2]. Numerous innovations in hysteroscopy have resulted in techniques suitable for performance in an office setting [1, 3]. The diameter of the scopes has become smaller, a speculum and tenaculum are no longer necessary for insertion of the scope (vaginoscopy), and miniaturised instruments are available. Furthermore, the 'see and treat' option is supported by the use of bipolar energy, a continuous flow system and an electronic fluid pump, maintaining a constant low intrauterine pressure.

Nevertheless, the development in hysteroscopy came relatively late in comparison to other procedures in the endoscopic field [1, 3, 4]. The innovations as mentioned above only started in the mid-'90s. The slow progress in development was due to the small number of therapeutic applications. The main aim of uterine investigation was exclusion of malignancy, for which 'blind' curettage remained sufficient. Furthermore, specific difficulties encountered during hysteroscopy hampered its clinical use (e.g. the narrowness of the uterine cervix, and the difficulty of maintaining clear vision of the uterine cavity during distension) [4]. Meanwhile, (onco)gynaecologists continued using other techniques (curettage, hysterectomy) as the standard procedures for abnormal uterine bleeding (AUB), and became reluctant to accept new developments entailing an inevitable learning curve [1, 4]. Moreover, there was no financial incentive to replace the other techniques by the hysteroscopic approach [4]. All this resulted in a slow adaptation of diagnostic and therapeutic hysteroscopy into daily gynaecological practice.

In the Netherlands, five questionnaires were conducted in the past to investigate the degree of diffusion and the current practice of hysteroscopic procedures [5-9]. Van Dongen et al. reported on the diffusion of hysteroscopic procedures in 2002 by the percentage of hospitals performing different types of hysteroscopic procedures and the number of hysteroscopic procedures performed per gynaecologist [9]. These 2002 outcomes were compared with outcomes of a survey from 1997, and showed an increasing performance of diagnostic and therapeutic hysteroscopic procedures, while the number per gynaecologist, more in particular for advanced hysteroscopic procedures, was limited [6]. Timmermans et al. showed in 2003 that office hysteroscopic polypectomy was not a common procedure [7]. Comparison of the number of polypectomies in teaching hospitals and non-teaching hospitals

demonstrated that gynaecologists in teaching hospitals performed significantly more procedures in an office environment. In 2013, Janse et al. assessed the opinion of residents in obstetrics and gynaecology (postgraduate year 5 and 6) and freshly graduated gynaecologists (< 5 years) on their hysteroscopic training and current practice [5]. The implementation of hysteroscopic procedures trained during residency appeared to have improved compared to the standard in a similar survey in 2003, and hysteroscopic training during residency was judged as sufficient by both residents and recently graduated gynaecologists [8]. Furthermore, the expertise of young gynaecologists was enhanced compared to 2003.

In bordering Flanders, the Dutch speaking northern part of Belgium, the rollout of hysteroscopic procedures in daily practice, as well as the environment in which they are performed, remains unclear. To our knowledge, no data have been published thus far.

By means of a questionnaire we aimed to obtain a current update of ideas on hysteroscopy and the hysteroscopic practices in both the Netherlands and Flanders.

Material and methods

An electronic survey (LimeService) in Dutch (appendix S1) was verified and adjusted by 5 gynaecologists, and approved by the ethics committee of the Ghent University Hospital, Belgium (Flanders). The study was registered at ClinicalTrials.gov (NCT02853695). In August 2016, the questionnaire was sent to all practising gynaecologist members of the Dutch Society of Obstetrics and Gynaecology (NVOG) in the Netherlands (n=591) and the Flemish Society of Obstetrics and Gynaecology (VVOG) in Flanders (n=586). When a gynaecologist holds membership of both the NVOG and the VVOG, he/she was classified according to the country/region where he/she is currently working. In addition to gynaecologists from Flanders, colleagues responding to the questionnaire who were working in the Brussels-Capital Region were also included. All data were registered anonymously.

To improve the Flemish response, three reminder emails were sent at 6, 8 and 14 weeks after the initial mailing. In the Netherlands, due to administrative constraints, only two reminder mailings were sent at 6 and 8 weeks. After informed consent, all gynaecologists were asked to complete the first part of the questionnaire containing general information, describing the respondent's characteristics as well as the respondent's preferences regarding hysteroscopy for diagnosis and treatment of intrauterine pathology and AUB. The second part was specific

for gynaecologists performing hysteroscopy, and included questions concerning the patient preparation phase prior to hysteroscopic procedures, the setting and use of anaesthesia for hysteroscopy, as well as the characteristics of the procedures (numbers performed, pathology characteristics and types of instrumentation) in both the office setting and the operating room.

Data were collected and analysed in the statistical program SPSS version 24 (IBM SPSS Statistics 24.0, IBM Corp., Armonk, NY, USA).

Gynaecologists were classified by country/region, namely the Netherlands or Flanders, with the latter also including respondents from the Brussels-Capital Region, and by type of clinic (teaching versus non-teaching hospital).

For symmetric distributed continuous variables, means, standard deviations, and 95% confidence intervals (CIs) are reported. For non-symmetric distributed continuous variables median, interquartile range (IQR), minimum and maximum were computed. Categorical data are presented as frequency and percentage.

Demographical data were compared between type of clinic within the Netherlands and Flanders, and a comparison was also made between Flanders and the Netherlands per type of clinic. For the baseline characteristics, symmetric and non-symmetric distributed continuous data were analysed using the t-test and Mann-Whitney U test respectively, and categorical data were analysed using Chi-square test.

Categorical outcome data, and non-symmetric continuous outcome variables recoded into categorical variables, were analysed by binary logistic regression analysis. The odds ratio (OR) with 95% CI was computed comparing Flanders and the Netherlands as well as teaching and non-teaching hospitals. If the interaction between country/region and type of hospital was significant, teaching and non-teaching hospitals were compared per country/region. Moreover, the OR was adjusted (aOR) for unbalanced baseline variables found to be clinically significant. Symmetric distributed continuous outcome variables were analysed by linear regression, analogous to the logistic regression.

For all analyses, a p-value $< .05$ indicated statistical significance.

Results

The total response rate was 21.2% (249/1177). The response rate for the Netherlands was 15.4% (91/591), and for Flanders 27.0% (158/586). The response data are shown in figure 1 and 2, for the Netherlands and Flanders, respectively. Eight gynaecologists completed the questionnaire through the VVOG but are currently working in the Netherlands. Conversely, one gynaecologist completed the questionnaire through the NVOG but is currently working in Flanders. Data were analysed according to the country/region of practice. Eight gynaecologists working in other countries, including the United Kingdom, France, Australia and Germany, were excluded from analysis.

Demographical data of the respondents are presented in table S2. Responding gynaecologists from the Netherlands had significantly less clinical experience compared to respondents from Flanders in both teaching (median 12 years [IQR 4 – 20] vs 15 years [IQR 9 – 24], p = .01) and non-teaching hospitals (median 9 years [IQR 4 – 16] vs 17 years [IQR 10 – 26], p < .01). Data analysis of the first part of the questionnaire was therefore adjusted for clinical experience. This continuous variable was transformed into three logical categories: < 10 years, between 10 and 24 years, and 25 years or more clinical experience. The reported number of gynaecologists per team, was significantly higher in teaching hospitals compared to non-teaching hospitals in both the Netherlands (median 13 [IQR 10 – 18] vs 7 [IQR 5 – 7], p < .01) and Flanders (median 10 [IQR 7 – 16] vs 6 [IQR 5 – 7], p < .01), and significantly higher in the Netherlands compared to Flanders in teaching hospitals (p = .02). However, all respondents belonged to a team that consisted of at least 3 gynaecologists, therefore this was not judged as clinically significant for the analysis. On the other hand, there was a significantly lower percentage of gynaecologists performing hysteroscopy per team in teaching hospitals compared to non-teaching hospitals in the Netherlands (median 50.0% [IQR 33.3 – 66.7%] vs 80.0% [IQR 50.0 – 100.0%], p < .01) and Flanders (median 75.0% [IQR 46.7 – 100.0%] vs 100.0% [IQR 62.5 – 100.0%], p = .01), and a significantly lower percentage in teaching hospitals in the Netherlands compared to Flanders (p < .01). Only one team in Flanders, consisting of 8 gynaecologists, reported that none of them performed hysteroscopy; all other teams (in the Netherlands and Flanders) contained at least one hysteroscopist. Therefore, we did not account for the percentage of hysteroscopists per team in the analysis of the outcome data. The number of gynaecologists performing hysteroscopy

Figure 1 Response data in the Netherlands

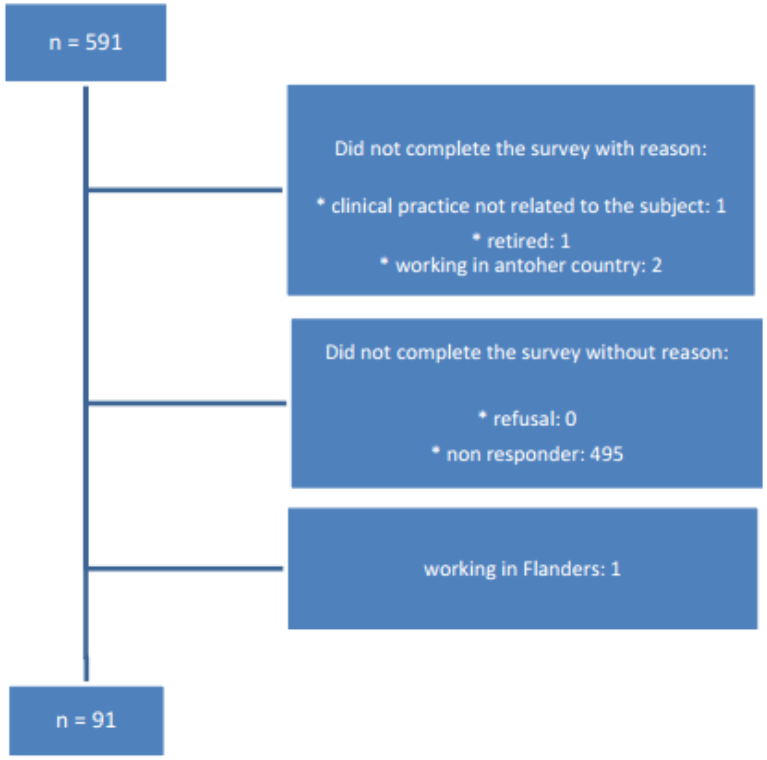
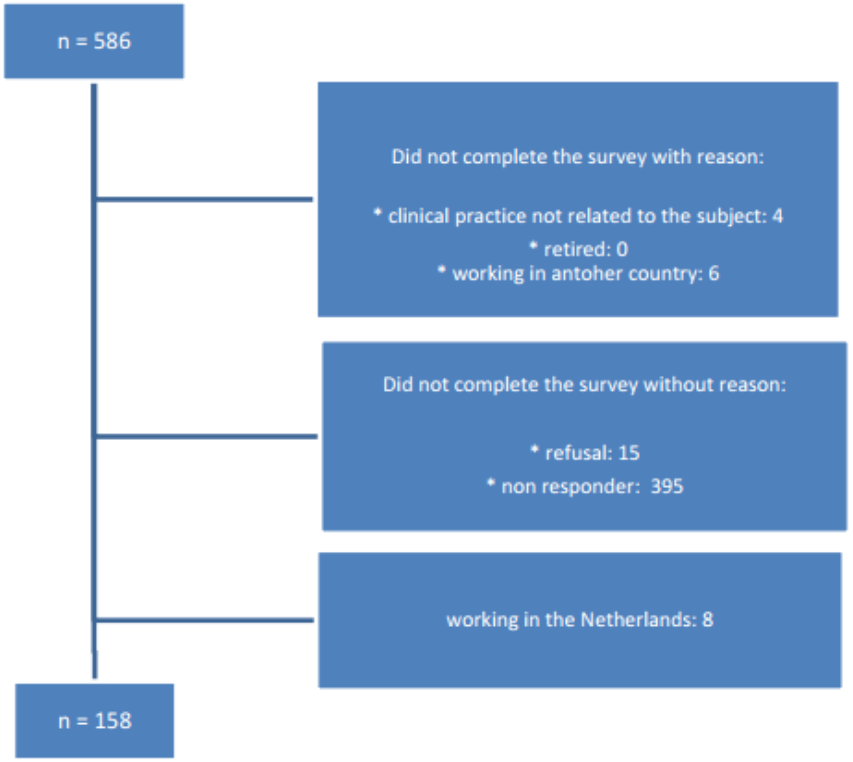


Figure 2 Response data in Flanders



amongst the respondents was significantly higher in teaching hospitals in the Netherlands compared to Flanders (94.8% vs 79.3%, p = .01). This was found to be clinically relevant because hysteroscopists were considered to be more likely to respond to this questionnaire, as well as in favour of a hysteroscopic approach, and therefore this was taken into account when analysing the responses to the first part of the questionnaire. The number of respondents who are member of an endoscopic association was significantly higher in the Netherlands compared to Flanders in both teaching (65.5% vs 28.5%, p < .01) and non-teaching hospitals (57.6% vs 14.9, p < .01). Only 4 trained hysteroscopists, working in a teaching hospital in Flanders, are currently not performing hysteroscopic procedures. Membership and hysteroscopic education were not taken into account in the analysis as we already corrected for hysteroscopic activity. There was no significant difference in hysteroscopic experience amongst gynaecologists performing hysteroscopy, however, the possible influence of experience was found to be clinically relevant. Therefore, the analysis of the second part of the questionnaire, specific for gynaecologists performing hysteroscopy, was corrected for hysteroscopic experience instead of overall clinical experience. This continuous variable was transformed into three logical categories: < 5 years, between 5 and 19 years, 20 years or more experience in hysteroscopy.

1. Hysteroscopy for diagnosis and treatment of intrauterine pathology and AUB

Respondent's preferences regarding hysteroscopy for diagnosis and treatment of intrauterine pathology and AUB are presented in table 1, and the logistic regression analysis results in table S3.

The adjusted odds for the performance of saline infusion sonohysterography (SIS) in addition to ultrasound in case of suspicion of intrauterine pathology were significantly higher in the Netherlands compared to Flanders (aOR 17.7 [95% CI 7.7 – 48.3], p <.01). Overall, an average of 94.0% of the respondents perform diagnostic hysteroscopy in addition to ultrasound in case of suspicion of intrauterine pathology.

The adjusted odds for hysteroscopy instead of curettage as preferred technique for polypectomy were significantly higher in the Netherlands compared to Flanders (aOR 12.5

Table 1 Respondent's preferences regarding hysteroscopy for diagnosis and treatment of intrauterine pathology and AUB

		NL						FL					
		T			Non-T			T			Non-T		
		Total N	N	%	Total N	N	%	Total N	N	%	Total N	N	%
SIS in addition to ultrasound in case of suspicion of intrauterine pathology		58			33			111			47		
	Never		3	5.2%		4	12.1%		65	58.6%		25	53.2%
	Sometimes		28	48.3%		19	57.6%		37	33.3%		21	44.7%
	Always		27	46.6%		10	30.3%		9	8.1%		1	2.1%
Diagnostic hysteroscopy in addition to ultrasound in case of suspicion of intrauterine pathology		58			33			111			47		
	Never		5	8.6%		0	0.0%		4	3.6%		6	12.8%
	In addition to SIS		10	17.2%		5	15.2%		6	5.4%		0	0.0%
	Whether or not in addition to SIS		38	65.5%		19	57.6%		28	25.2%		20	42.6%
	In addition to ultrasound, without SIS		5	8.6%		9	27.3%		73	65.8%		21	44.7%
Preferred technique for polypectomy		57			33			109			46		
	Curettage		1	1.8%		0	0.0%		13	11.9%		8	17.4%
	Hysteroscopy		56	98.2%		33	100.0%		96	88.1%		38	82.6%
Hysteroscopic resection as treatment for intrauterine myoma ǂ		58			33			111			47		
	Never		0	0.00%		0	0.00%		3	2.7%		5	10.6%
		58			33			111			47		
	Type 0 myoma		52	89.7%		29	87.9%		91	82.0%		38	80.9%
		58			33			111			47		
	Type I myoma		53	91.4%		30	90.9%		95	85.6%		37	78.7%
		58			33			111			47		
	Type II myoma		34	58.6%		6	18.2%		42	37,8%		13	27,7%
Preferred treatment for type II myoma in women without reproductive desire		57			33			109			46		
	Hysteroscopy		37	64.9%		18	54.5%		58	53.2%		15	32.6%
	Hysterectomy		20	35.1%		15	45.5%		51	46.8%		31	67.4%
Preferred treatment for AUB-HMB in women without reproductive desire		57			33			109			46		
	IUD		52	91.2%		30	90.9%		103	94.5%		44	95.7%
	Type I ablation		0	0.0%		0	0.0%		5	4.6%		1	2.2%
	Type II ablation		5	8.8%		3	9.1%		0	0.0%		0	0.0%
	Hysterectomy		0	0.0%		0	0.0%		1	0.9%		1	2.2%
No additional diagnostics in case of suspicion of placental remnants on ultrasound		58			33			111			47		
			11	19.0%		2	6.1%		11	9.9%		8	17.0%
Doppler ultrasound in addition to ultrasound in case of suspicion of placental remnants		58			33			111			47		
			9	15.5%		3	9.1%		43	38.7%		20	42.6%
SIS in addition to ultrasound in case of suspicion of placental remnants		58			33			111			47		
			12	20.7%		6	18.2%		3	2.7%		4	8.5%
Diagnostic hysteroscopy in addition to ultrasound in case of suspicion of placental remnants		58			33			111			47		
			40	65.0%		29	87.9%		77	69.4%		30	63.8%
Preferred technique for the removal of placental remnants		57			33			108			46		
	Curettage		2	3.5%		0	0.0%		28	25.9%		18	39.1%
	Hysteroscopy		55	96.5%		33	100.0%		80	74.1%		28	60.9%
		58			33			111			47		
Minimum time interval between end of pregnancy and removal of placental remnants by curettage	None		43	67.2%		18	54.5%		49	44.1%		15	31.9%
	6 weeks		13	22.4%		10	30.3%		46	41.4%		18	38.3%
	8 weeks		4	6.5%		3	9.1%		13	11.7%		5	10.6%
	10 weeks		2	3.4%		2	6.1%		3	2.7%		9	19.1%
		58			33			111			47		
Minimum time interval between end of pregnancy and removal of placental remnants by hysteroscopy	None		22	37.9%		4	12.1%		23	20.7%		11	23.4%
	6 weeks		23	39.7%		19	57.6%		63	56.8%		15	31.9%
	8 weeks		10	17.2%		6	18.2%		14	12.6%		12	25.5%
	10 weeks		3	5.2%		4	12.1%		11	9.9%		9	19.1%

NL = Netherlands, FL = Flanders
T = teaching hospital, Non-T = non-teaching hospital
SIS = saline infusion sonohysterography
AUB-HMB = abnormal uterine bleeding - heavy menstrual bleeding
IUD = intrauterine device
ǂ multiple responses possible

[95% CI 2.5 – 229.1], p <.01). Overall, an average of 91.0% of the respondents preferred the hysteroscopic technique.

The adjusted odds for performing or referring patients for hysteroscopic resection of type II myomas, were significantly higher for respondents working in teaching compared to non-teaching hospitals (aOR 3.0 [95% CI 1.6 – 5.6], p < .01), and significantly lower if the respondent did not perform hysteroscopy him/herself (aOR 0.3 [95% CI 0.1 – 1.0], p < .01). In teaching and non-teaching hospitals in Flanders, respectively 2.7% and 10.6% of the respondents never treated or referred patients for treatment of intrauterine myomas by hysteroscopy, whereas in the Netherlands all of the gynaecologists treated or referred patients for hysteroscopic myomectomy.

The adjusted odds for hysterectomy as preferred treatment for a type II myoma instead of hysteroscopic resection in women without further reproductive desire were significantly lower in teaching compared to non-teaching hospitals (aOR 0.5 [95% CI 0.3 – 0.9], p = .02). Moreover, the adjusted odds were significantly lower for gynaecologists with less (< 10 years) clinical experience compared to both gynaecologists with mean (10 - 24 years) (aOR 0.44 [95% CI 0.24 – 0.81, p = .01] and long (≥ 25 years) clinical experience (aOR 0.34 [95% CI 0.15-0.72], p = .01). Overall, on average only 52.2% of the respondents preferred the hysteroscopic technique.

Almost nobody in the sample performs hysterectomy as first choice for heavy menstrual bleeding (HMB) in women without further reproductive desire.

Many of the respondents, on average 70.7%, perform or refer patients for diagnostic hysteroscopy in addition to ultrasound in case of suspicion of placental remnants. The adjusted odds for hysteroscopy as the preferred technique for removal of placental remnants instead of curettage were significantly higher in the Netherlands compared to Flanders (aOR 16.8 [95% CI 4.9 – 105.9], p < .01). Moreover, the adjusted odds for the latter were significantly higher for both gynaecologists with less (< 10 years) (aOR 3.3 [95% CI 1.3 – 9.0], p = .01) and with mean (10 - 24 years) (aOR 3.0 [95% CI 1.3 – 6.9], p = .01) clinical experience compared to long (≥ 25 years) clinical experience. The adjusted odds for not maintaining a minimum time interval or maintaining a minimum of less than 6 weeks after end of pregnancy for removal of placental remnants by curettage were significantly lower in the Netherlands compared to Flanders (aOR 0.4 [95% CI 0.2 – 0.7], p < .01). The adjusted odds for no minimum time interval or a minimum of less than 6 weeks after end

of pregnancy for removal of placental remnants by hysteroscopy were significantly lower in teaching hospitals compared to non-teaching hospitals in the Netherlands (aOR 0.2 [95% CI 0.1 – 0.7], p = .01).

2. Gynaecologists performing hysteroscopy

2.1 Hysteroscopic procedures, preparation, setting and anaesthesia

The respondent's preferences regarding the preparation phase, setting and type of anaesthesia for hysteroscopic procedures and their performed hysteroscopic procedures are presented in table 2 and S4, and the logistic regression analysis results in table S5.

All responding hysteroscopists perform hysteroscopic polypectomy and all responding hysteroscopists from the Netherlands perform hysteroscopic removal of placental remnants. Overall, on average 94.6% perform diagnostic hysteroscopy and 93.8% perform hysteroscopic myomectomy.

The adjusted odds for responding hysteroscopists to perform removal or repositioning of an intrauterine device (IUD) and sterilisation by hysteroscopy were significantly higher in the Netherlands compared to Flanders (aOR 2.7 [95% CI 1.2 – 7.2], p = .02 and aOR 9.4 [95% CI 4.1 – 23.7], p < .01, respectively). If gynaecologists had less (< 5 years) hysteroscopic experience, the odds for performing sterilisation by hysteroscopy were significantly lower compared with mean (5 – 19 years) experienced hysteroscopic surgeons (aOR 0.3 [95% CI 0.1 – 0.8], p = .02). The adjusted odds for hysteroscopic septum resection performance were significantly lower for respondents from the Netherlands compared to those from Flanders (aOR 0.2 [95% CI 0.1 – 0.4], p < .01). The adjusted odds for performing hysteroscopic endometrial ablation (type I and II) were significantly lower for respondents from teaching hospitals compared to non-teaching hospitals in the Netherlands (aOR 0.1 [95% CI 0.0 – 0.4], p < .01).

The adjusted odds for the use of ripening agents for cervical preparation before hysteroscopic procedures with and without cervical dilation were significantly lower in the Netherlands compared to Flanders (respectively aOR 0.4 [95% CI 0.2 – 0.9], p = .01 and aOR 0.5 [95% CI 0.3 – 0.8], p = .01). Overall, the percentage of responding hysteroscopists using ripening

Table 2 Respondent's preferences regarding the preparation phase, setting and type of anaesthesia for hysteroscopic procedures

		NL						FL					
			T			Non-T			T			Non-T	
		Total N	N	%	Total N	N	%	Total N	N	%	Total N	N	%
Agents for cervical preparation before a hysteroscopic procedure *without* dilation (small diameter)		51			29			81			40		
	Always		0	0.0%		1	3.5%		3	3.7%		4	10.0%
	Sometimes		9	17.6%		6	20.7%		31	38.3%		9	22.5%
	Never		42	82.4%		22	75.9%		47	58.0%		27	67.5%
Agents for cervical preparation before a hysteroscopic procedure *with* dilation (small diameter)		51			29			81			40		
	Always		2	3.9%		3	10.3%		12	14.8%		7	17.5%
	Sometimes		20	39.2%		10	34.5%		42	51.9%		18	45.0%
	Never		29	56.9%		16	55.2%		27	33.3%		15	37.5%
Preferred setting for diagnostic hysteroscopy		50			28			75			38		
	Office		45	90.0%		23	82.1%		46	61.3%		12	31.6%
	Day surgery		4	8.0%		5	17.9%		29	38.7%		26	68.4%
	Inpatient surgery		1	2.0%		0	0.0%		0	0.0%		0	0.0%
Preferred setting for operative hysteroscopy		44			28			73			32		
	Office		8	18.2%		5	17.9%		3	4.1%		1	3.1%
	Day surgery		33	75.0%		23	82.1%		69	94.5%		31	96.9%
	Inpatient surgery		3	6.8%		0	0.0%		1	1.4%		0	0.0%
Preferred type of anaesthesia for diagnostic hysteroscopy		50			28			75			38		
	None		45	90.0%		25	89.3%		46	61.3%		12	31.6%
	Local		0	0.0%		1	3.6%		3	4.0%		5	13.2%
	Sedation		3	6.0%		0	0.0%		3	4.0%		1	2.6%
	Regional		1	2.0%		1	3.6%		0	0.0%		2	5.3%
	General		1	2.0%		1	3.6%		23	30.7%		18	47.4%
Preferred type of anaesthesia for operative hysteroscopy		44			27			73			32		
	None		3	6.8%		3	11.1%		0	0.0%		0	0.0%
	Local		0	0.0%		3	11.1%		0	0.0%		0	0.0%
	Sedation		9	20.5%		3	11.1%		5	6.9%		1	3.1%
	Regional		15	34.1%		9	33.3%		1	1.4%		3	9.4%
	General		17	38.6%		9	33.3%		67	91.8%		28	87.5%
Preferred entrance technique in case of diagnostic hysteroscopy		50			28			75			38		
	Vaginoscopy		49	98.0%		26	92.9%		26	34.7%		10	26.3%
	Speculum		1	2.0%		2	7.1%		49	65.3%		28	73.7%
Cervical dilation in case of diagnostic hysteroscopy using a speculum		1			2			49			28		
	Yes		0	0.0%		0	0.0%		11	22.5%		4	14.3%
	Sometimes		0	0.0%		1	50.0%		23	46.9%		16	57.1%
	No		1	100.0%		1	50.0%		15	30.6%		8	28.6%
Setting for office hysteroscopy present		51			29			81			40		
	Yes		50	98.0%		27	93.1%		58	71.6%		21	52.5%

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

agents for cervical preparation before hysteroscopic procedures without cervical dilation was lower compared to hysteroscopic procedures with dilatation. The adjusted odds for admission (day or inpatient surgery) as the preferred setting for diagnostic hysteroscopy were significantly lower in the Netherlands compared to Flanders, and in teaching hospitals compared to non-teaching hospitals (aOR 0.2 [95% CI 0.1 – 0.3], p < .01 and aOR 0.3 [95% CI 0.2 – 0.7], p < .01, respectively). Moreover, the adjusted odds for admission as the preferred setting for operative hysteroscopy were significantly lower in the Netherlands compared to Flanders (aOR 0.2 [95% CI 0.0 – 0.5], p < .01).

The adjusted odds for sedation, regional or general anaesthesia as preferred type of anaesthesia for diagnostic hysteroscopy were significantly lower amongst the respondents from the Netherlands compared to Flanders (aOR 0.2 [95% CI 0.1 – 0.3], p < .01). Moreover, the adjusted odds were significantly lower for both gynaecologists with less (< 5 years) and mean (5 – 19 years) hysteroscopic experience compared to long (≥ 20 years) experience (respectively aOR 0.2 [95% CI 0.1 – 0.5], p < .01 and 0.3 [95% CI 0.1 – 0.6], p < .01). All responding hysteroscopists from Flanders prefer sedation, regional or (mainly) general anaesthesia for operative hysteroscopy.

The adjusted odds for preferring the use of a speculum in case of a diagnostic hysteroscopy were significantly lower in the Netherlands compared to Flanders (aOR 0.02 [95% CI 0.1 – 0.1], p < .01). On average 96.2% of the Dutch respondents prefer the vaginoscopic approach for diagnostic hysteroscopy, whereas many (on average 68.1%) of the Flemish respondents prefer to use a speculum and 70.1% indicate that they sometimes or always dilate the cervix when using a speculum. The adjusted odds for respondents lacking a setting for office hysteroscopy were significantly lower in the Netherlands compared to Flanders, and in teaching hospitals compared to non-teaching hospitals (aOR 0.1 [95% CI 0.0 – 0.2] p < .01 and aOR 0.4 [95% CI 0.2 – 0.9], p = .02, respectively). Moreover, the adjusted odds were significantly lower for both gynaecologists with less (< 5 years) and mean (5 – 19 years) hysteroscopic experience compared to long (≥ 20 years) hysteroscopic experience (aOR 0.3 [95% CI 0.1 – 0.8], p .02 and aOR 0.4 [95% CI 0.2 – 0.9], p .03, respectively).

2.2 Office setting

Descriptive data regarding hysteroscopy in the office setting and the number of hysteroscopic procedures performed in the office setting per year are presented in table 3 and S6 respectively, and logistic regression analysis results in table S7.

The adjusted odds for the performance of hysteroscopic procedures such as IUD removal or repositioning (aOR 2.9 [95% CI 1.3 – 6.8], p = .01), polypectomy (aOR 7.2 [95% CI 3.4 – 16.3], p < .01), myomectomy (aOR 3.4 [95% CI 1.5 – 7.9], p < .01), endometrial ablation (type I and II) (aOR 6.0 [95% CI 2.5 – 16.1], p < .01), sterilisation (aOR 9.6 [95% CI 3.6 – 30.4], p < .01) and removal of placental remnants (aOR 2.7 [95% CI 1.5 – 6.1], p < .01) in an office setting were significantly higher for responding hysteroscopists from the Netherlands compared to Flanders. Moreover, the adjusted odds for the performance of office hysteroscopic IUD removal or repositioning were significantly higher for gynaecologists with less (< 5 years) hysteroscopic experience compared to gynaecologists with both mean (5 – 19 years) and long (≥ 20 years) hysteroscopic experience (aOR 3.3 [95% CI 1.4 – 10], p = .01 and aOR 5 [95% CI 1.25 – 10], p = .02, respectively). The adjusted odds for the performance of office hysteroscopic polypectomy were significantly higher for gynaecologists with less (< 5 years) hysteroscopic experience compared to long (≥ 20 years) hysteroscopic experience (aOR 4.7 [95% CI 1.4 – 17.3], p = .01).

The adjusted odds for the use of scissors or forceps (aOR 7.3 [95% CI 3.4 – 16.3], p < .01), polyp snare (aOR 10.0 [95% CI 2.3 – 70.6], p < .01), bipolar instruments with fine diameter (aOR 5.5 [95% CI 2.3 – 14.4], p < .01) and hysteroscopic morcellation (aOR 7.9 [95% CI 2.8 – 28.5], p < .01) for office hysteroscopic polypectomy were significantly higher for responding hysteroscopists from the Netherlands compared to Flanders. Moreover, if gynaecologists had less (< 5 years) hysteroscopic experience, the adjusted odds for the use of a polyp snare for office hysteroscopic polypectomy were significant higher compared to mean (5 – 19 years) hysteroscopic experience (aOR 10 [95% CI 2.5 – 100], p < .01). None of the responding hysteroscopists use laser, and almost none use a unipolar resectoscope for office polypectomy.

The adjusted odds for the use of bipolar instruments with a fine diameter and hysteroscopic morcellation for office myomectomy were significantly higher in the Netherlands compared to Flanders (aOR 7.9 [95% CI 2.0 – 53.3], p < .01 and aOR 11.0 [95% CI 2.9 – 72.3], p < .01, respectively). None of the responding hysteroscopists use a unipolar resectoscope or laser for office myomectomy.

Table 3 Descriptive data regarding hysteroscopy in the office setting

		NL						FL					
		T			Non-T			T			Non-T		
		Total N	N	%	Total N	N	%	Total N	N	%	Total N	N	%
Instrumentation for polypectomy ¥		47			27			53			19		
	No polypectomy		8	17.0%		5	18.5%		34	64.2%		14	73.7%
	Scissors / forceps		34	72.3%		14	51.9%		11	20.8%		4	21.1%
	Polyp snare		10	21.3%		2	7.4%		2	3.8%		0	0.0%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Unipolar resectoscope		0	0.0%		0	0.0%		1	1.9%		0	0.0%
	Bipolar resectoscope		2	4.3%		1	3.7%		5	9.4%		2	10.5%
	Hysteroscopic morcellator		15	31.9%		9	33.3%		4	7.6%		0	0.0%
	Bipolar instruments with fine diameter		21	40.4%		10	37.0%		8	15.1%		0	0.0%
Instrumentation for myomectomy ¥		47			27			53			19		
	No myomectomy		27	57.4%		17	63.0%		46	86.8%		16	84.2%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Unipolar resectoscope		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Bipolar resectoscope		4	8.5%		1	3.7%		5	9.4%		4	21.1%
	Hysteroscopic morcellator		11	23.4%		7	25.9%		2	3.8%		0	0.0%
	Bipolar instruments with fine diameter		9	17.0%		4	14.8%		2	3.8%		0	0.0%
Instrumentation for septum resection ¥		47			27			53			19		
	No septum resection		41	87.2%		23	85.2%		42	79.3%		16	84.2%
	Scissors		1	2.1%		3	11.1%		9	17.0%		3	15.8%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Unipolar resectoscope		1	2.1%		1	3.7%		2	3.8%		0	0.0%
	Bipolar resectoscope		0	0.0%		0	0.0%		1	1.9%		1	5.3%
	Hysteroscopic morcellator		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Bipolar instruments with fine diameter		5	10.6%		1	3.7%		4	7.6%		0	0.0%
Instrumentation for adhesiolysis ¥		47			27			53			19		
	No adhesiolysis		23	48.9%		20	74.1%		33	62.3%		16	84.2%
	Scissors / forceps		23	48.9%		7	25.9%		18	34.0%		4	21.1%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Resectoscope		1	2.1%		0	0.0%		1	1.9%		0	0.0%
	Hysteroscopic morcellator		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Bipolar instruments with fine diameter		7	14.9%		2	7.4%		3	5.7%		0	0.0%
Limit of polyp size for polypectomy		47			27			53			19		
	No polypectomy		8	17.0%		6	22.2%		34	64.2%		16	84.2%
	No		11	23.4%		9	33.3%		9	17.0%		1	5.3%
	1 cm		7	14.9%		4	14.8%		4	7.6%		1	5.3%
	2 cm		14	29.8%		7	25.9%		2	3.8%		0	0.0%
	3 cm		5	10.6%		0	0.0%		1	1.9%		1	5.3%
	4 cm		2	4.3%		1	3.7%		3	5.7%		0	0.0%
Limit of myoma size for myomectomy		47			27			53			19		
	No myomectomy		26	55.3%		14	51.9%		39	73.6%		15	79.0%
	No		0	0.0%		2	7.4%		4	7.6%		1	5.3%
	1 cm		11	23.4%		5	18.5%		2	3.8%		2	10.5%
	2 cm		8	17.0%		2	7.4%		1	1.9%		0	0.0%
	3 cm		2	4.3%		3	11.1%		6	11.3%		1	5.3%
	4 cm		0	0.0%		1	3.7%		1	1.9%		0	0.0%
Limit for adhesiolysis		47			27			53			19		
	No adhesiolysis		21	44.7%		17	63.0%		30	56.6%		13	68.4%
	Mild		14	29.8%		7	25.9%		11	20.8%		4	21.1%
	Moderate		9	19.1%		3	11.1%		6	11.3%		0	0.0%
	Severe		3	6.4%		0	0.0%		6	11.3%		2	10.5%

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

¥ multiple responses are possible

The adjusted odds for the use of scissors for office septum resection were significantly lower in the Netherlands compared to Flanders (aOR 0.2 [95% CI 0.1 – 0.7], p =.01). If gynaecologists had less (< 5 years) hysteroscopic experience, the adjusted odds for the use of scissors were significantly higher (aOR 5 [95% CI 1.7 – 33.3], p = .01) compared to mean (5 – 19 years) experience. None of the respondents use laser or hysteroscopic morcellation for office septum resection.

The adjusted odds for the use of scissors or forceps for adhesiolysis were significantly higher in teaching hospitals compared to non-teaching hospitals (aOR 2.3 [95% CI 1.0 – 5.4], p = .04). The adjusted odds for the use of bipolar instruments with a fine diameter were significantly higher in the Netherlands compared to Flanders (aOR 4.3 [95% CI 1.2 – 21.1], p = .03). Responding hysteroscopists prefer to use scissors, followed by bipolar instruments with a fine diameter, and seldom the resectoscope for office adhesiolysis. None of the gynaecologists use laser or hysteroscopic morcellation for office adhesiolysis.

No significant differences were seen in handling a cut-off size of 1 cm for a polyp, and moderate as a maximum degree of adhesions for office hysteroscopic treatment between country/region or type of hospital. 76.5% of the Dutch responding gynaecologists respect a myoma size limit of 2 cm for office treatment, and no significant differences were seen in myoma cut-off between teaching and non-teaching hospitals in Flanders.

The ratio between the reported amount of hysteroscopic procedures performed in an office setting and the total of hysteroscopic procedures was 17% (95% CI 8.4% – 25.6%) higher amongst respondents from the Netherlands compared to Flanders (p < .01). Moreover, per year additional hysteroscopic experience this ratio was 7.8% (95%CI 1.5% – 14%) lower (p = .02). The overall observed mean ratio was 60% in the Netherlands and 40% in Flanders.

2.3 Operating room

Descriptive data regarding hysteroscopy in the operating room and the number of hysteroscopic procedures performed in the operating room per year are presented in table 4 and S8 respectively, and logistic regression analysis results in table S9.

All responding hysteroscopists from non-teaching hospitals in Flanders report that they do perform hysteroscopic IUD removal or repositioning in the operating room. In non-teaching

Table 4 Descriptive data regarding hysteroscopy in the operating room

		NL						FL					
		T			Non-T			T			Non-T		
		Total N	N	%	Total N	N	%	Total N	N	%	Total N	N	%
Instrumentation for polypectomy ¥		44			28			73			32		
	No polypectomy		0	0.0%		0	0.0%		1	1.4%		0	0.0%
	Scissors / forceps		19	43.2%		9	32.1%		15	20.6%		10	31.3%
	Polyp snare		4	9.1%		1	3.6%		3	4.1%		1	3.1%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Unipolar resectoscope		5	11.4%		6	21.4%		14	19.2%		4	12.5%
	Bipolar resectoscope		30	68.2%		16	57.1%		54	74.0%		27	84.4%
	Bipolar instruments with fine		12	27.3%		14	50.0%		8	11.0%		2	6.3%
	Hysteroscopic morcellator		19	41.3%		4	14.3%		3	4.1%		1	3.1%
Instrumentation for myomectomy ¥		43			27			69			27		
	No myomectomy		0	0.0%		0	0.0%		2	2.9%		0	0.0%
	Laser		1	2.1%		0	0,0%		0	0.0%		0	0.0%
	Unipolar resectoscope		4	9.3%		6	22.2%		15	21.7%		4	14.8%
	Bipolar resectoscope		33	73.3%		18	66.7%		54	78.3%		22	81.5%
	Bipolar instruments with fine		17	38.6%		6	22.2%		6	8.7%		0	0.0%
	Hysteroscopic morcellator		11	25.6%		2	7.4%		2	2.9%		3	3.1%
Instrumentation for septum resection ¥		14			6			52			17		
	No septumresection		1	7.1%		0	0.0%		3	5.8%		0	0.0%
	Scissors		6	42.9%		1	16.7%		23	44.2%		8	47.1%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Unipolar resectoscope		0	0.0%		2	33.3%		17	32.7%		3	17.7%
	Bipolar resectoscope		5	35.7%		3	50.0%		17	32.7%		7	41.2%
	Bipolar instruments with fine		9	64.3%		1	16.7%		9	17.3%		3	17.7%
	Hysteroscopic morcellator		0	0.0%		0	0.0%		0	0.0%		0	0.0%
Instrumentation for adhesiolysis ¥		25			11			44			15		
	No adhesiolysis		3	12.0%		4	36.4%		1	2.3%		1	6.7%
	Scissors / forceps		21	84.6%		5	45.5%		29	65.9%		9	60.0%
	Laser		0	0.0%		0	0.0%		0	0.0%		0	0.0%
	Bipolar instruments with fine		7	28.0%		4	36.4%		16	36.4%		4	26.7%
	Resectoscope		6	24.0%		1	9.1%		13	29.6%		4	26.7%
	Hysteroscopic morcellator		0	0.0%		0	0.0%		0	0.0%		0	0.0%

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

¥ multiple responses are possible

hospitals in both Flanders and the Netherlands all respondents report that they do perform hysteroscopic polypectomy, myomectomy and septum resection in the operating room.

The adjusted odds for the use of scissors or forceps (aOR 2.1 [95% CI 1.1 – 4.0], p = .03), bipolar instruments with fine diameter (aOR 5.6 [95% CI 2.5 – 13.4], p < .01) and hysteroscopic morcellation (aOR 11.0 [95% CI 3.8 – 40.2], p < .01) for polypectomy in the operating room were significantly higher for responding hysteroscopists from the Netherlands compared to Flanders. The adjusted odds for the use of hysteroscopic morcellation for polypectomy were also significantly higher for respondents from teaching hospitals compared to non-teaching hospitals (aOR 3.0 [95% CI 1.1 – 9.9], p = .04).
The adjusted odds for the use of bipolar instruments with fine diameter (aOR 6.0 [95% CI 2.2 – 18.4], p < .01) and hysteroscopic morcellation (aOR 13.4 [95% CI 3.4 – 89.8], p < .01) for myomectomy in the operating room were significantly higher for respondents from the Netherlands compared to Flanders. The adjusted odds for the use of hysteroscopic morcellation for myomectomy were also significantly higher in teaching hospitals compared to non-teaching hospitals (aOR 5.0 [95% CI 1.2 – 34.4], p = .02). Only one respondent from a teaching hospital in the Netherlands uses laser for myomectomy.
The adjusted odds for the use of bipolar instruments with fine diameter for septum resection in the operating room were significantly higher in the Netherlands compared to Flanders (aOR 4.9 [95% CI 1.6 – 15.9], p = .01). None of the respondents use laser or hysteroscopic morcellation for septum resection or adhesiolysis. Overall, on average 67.4% of the respondents use scissors or forceps for adhesiolysis. Respondents from teaching hospitals in the Netherlands never use a unipolar resectoscope for septum resection.

Discussion

1. Main findings and interpretation

Our questionnaire on hysteroscopic practices in the neighbouring Netherlands and Flanders provides insight in the current situation, and confirms some of the differences that appear when Dutch and Flemish residents and gynaecologists from teaching and non-teaching hospitals work together or meet and discuss at mutual courses and conferences.

Most of the significant differences in the respondent's demographical data were as expected. The responding gynaecologists from the Netherlands have less clinical experience as a trained gynaecologist compared to those in Flanders, which can be explained by the longer duration of training before and during residency in the Netherlands. In contrast, no significant differences in experience as a trained hysteroscopist were seen between Flanders and the Netherlands amongst the respondents performing hysteroscopy. This can be explained by the fact that hysteroscopy nowadays is part of the training, whereas older, more experienced gynaecologists were less trained in hysteroscopy and may have started performing hysteroscopy later. On the other hand hysteroscopic training during residency may have been adopted earlier in the Netherlands, with younger colleagues having more hysteroscopic experience, or else Flemish gynaecologists who want to perform hysteroscopy find their training insufficient or do not immediately dispose of the necessary setting/instrumentation to perform hysteroscopy right after residency. The number of gynaecologists per team was higher in teaching compared to non-teaching hospitals, and in teaching hospitals, the number of gynaecologists per team was higher in the Netherlands compared to Flanders. Teaching hospitals most often are bigger, and, due to centralisation in the Netherlands, hospitals serve as second and third line reference centres. The percentage of gynaecologists performing hysteroscopy per team was lower in teaching compared to non-teaching hospitals, presumably because teaching hospitals are more likely to organise into subspecialties.

Respondents in the Netherlands were more likely to perform SIS in addition to ultrasound in case of suspicion of intrauterine pathology. However, the majority of all respondents refer patients for or perform diagnostic hysteroscopy in addition to ultrasound in case of suspicion of intrauterine pathology. SIS is superior to ultrasound for diagnosing intrauterine pathology, but hysteroscopy is the golden standard for diagnosing and treating intrauterine pathology making SIS an unnecessary investigation when office hysteroscopy is readily available [1, 2, 10].

The majority of the respondents indicate hysteroscopy as the preferred technique for polypectomy instead of curettage, especially in the Netherlands, and refer patients for, or perform resection of type 0 (pedunculated without intramural extension) and type I (intramural extension of less than 50%) myomas in both teaching and non-teaching hospitals. In contrast, the overall mean percentage of responding gynaecologists referring for or performing hysteroscopic removal of type II myomas (intramural extension of more than 50%) is much lower (38.2%). Respondents from teaching hospitals are more likely to refer for or perform hysteroscopic removal of type II myomas, and if the respondent does not perform

hysteroscopy him/herself, he/she is less prone to refer the patient to a colleague who performs hysteroscopy. In women without further reproductive desire only half of the responding gynaecologists prefer hysteroscopic removal of a type II myoma instead of hysterectomy, with, however, higher odds for respondents from teaching hospitals and less (< 10 years) experienced gynaecologists. The latter may be related to more hysteroscopic exposure during traineeship compared to more experienced gynaecologists. On the other hand, a high percentage of respondents opt for a conservative treatment (mainly IUD placement) in patients with HMB. Of course, IUD placement is a skill every gynaecologist acquires during training and the nearly everyone performs thereafter.

In line with the findings for polyp removal, a large proportion of the responding gynaecologists prefer hysteroscopy instead of curettage for the removal of placental remnants, especially in the Netherlands. It is shown that hysteroscopy is the best technique for removal of polyps and myomas as these intrauterine pathologies risk incomplete removal in case of curettage, and the existing evidence indicates the same for placental remnants [11-15]. In addition, we found a significant influence of clinical experience whereby less (< 10 years) and mean (10 – 24 years) experienced gynaecologists are more likely to prefer the hysteroscopic approach for placental remnants compared to their colleagues with long (≥ 25 years) experience. This can be explained by the fact that it is now 3 decades ago since visual examination of the uterine cavity via hysteroscopy was first described in cases of postabortum or postpartum bleeding, to diagnose and eventually remove placental remnants [16]. In case of removal of placental remnants by curettage, gynaecologists in the Netherlands were more likely to wait for more than 6 weeks after the end of pregnancy compared to their Flemish colleagues. In case of removal of placental remnants by hysteroscopy gynaecologists in teaching hospitals in the Netherlands were more apt to wait more than 6 weeks after the end of pregnancy compared to their colleagues from non-teaching hospitals. The optimal interval for removal of placental remnants is yet to be determined, however a longer interval may lead to a higher rate of spontaneous expulsion and a reduced risk of intrauterine adhesions in case of surgical removal, as well as an easier and safer hysteroscopic procedure [15, 17-19]. Now that investigation and conservative treatment of intrauterine pathology is playing a large role in (sub)fertile patients with future reproductive desire, and many women want to preserve their uterus and/or avoid major surgery regardless of their reproductive desire, the focus is no longer only on exclusion of malignancy, but mainly on complete removal of pathology and/or preserving/enhancing fertility. All together this promotes the hysteroscopic approach.

The majority of the responding hysteroscopists from both the Netherlands and Flanders perform diagnostic hysteroscopy, hysteroscopic IUD removal/repositioning, polypectomy, myomectomy, endometrial ablation and removal of placental remnants, and to a lesser extent septum resection, adhesiolysis and sterilisation. Thus our results indicate a large diffusion of diagnostic and basic hysteroscopic procedures, which is in agreement with the results of van Dongen et al, and centralisation of more specific procedures, such as adhesiolysis, is not so apparent [9]. Responding hysteroscopists in Flanders are more likely to perform hysteroscopic septum resections than their Dutch colleagues, while a randomised controlled trial (RCT), "The Randomised Uterine Septum Transsection Trial" (TRUST) (NTR1676), is still in progress in the Netherlands to investigate the effect of septum resection on reproductive outcome [20]. Hysteroscopic sterilisation is significantly more common in the Netherlands, because Essure® is not (yet) refunded by medical insurance in Belgium. Regarding the hysteroscopic procedures performed per responding gynaecologist in teaching and non-teaching hospitals, we only found a significant difference for endometrial ablation. Namely that responding gynaecologists from teaching hospitals in the Netherlands were less likely to perform endometrial ablation (type I and II). This is probably because gynaecologists working in non-teaching hospitals do not refer patients for type II endometrial ablation, but perform these themselves.

Responding hysteroscopists from the Netherlands are more likely to have a preference for performing both diagnostic and operative hysteroscopy in an office setting, compared to their Flemish colleagues. Moreover, Dutch respondents, as well as less experienced (<19 years) hysteroscopists were more likely to dispose of an office setting. Owing to the presence of an office setting, respondents from the Netherlands are more prone to use the no-touch vaginoscopic approach as entering technique, and, moreover, the Dutch, as well as the hysteroscopists with less experience, prefer to use no or local anaesthesia for diagnostic hysteroscopy. With insufficient evidence that cervical ripening agents reduce the risk of perforation related to operative hysteroscopy, responding hysteroscopists from the Netherlands are less inclined to use them [21]. Respondents from Flanders are less likely to have an office setting and all have a preference for performing operative hysteroscopy under sedation, regional or (mainly) general anaesthesia. This is mainly because of the lack of a sufficient financial compensation for office procedures, including specific instrumentation.

Respondents from teaching hospitals are more likely to have an office setting are less likely to admit patients for diagnostic hysteroscopy. As a result, during their training in teaching

hospitals, residents are taught to perform hysteroscopy in an office setting. Moreover, as teaching hospitals are larger institutes, they are expected to have more possibilities in their infrastructure. We did not find a significant difference in type of anaesthesia for either diagnostic or operative hysteroscopic procedures in relation to the type of hospital, whereas Timmermans et al. showed that, 14 years ago, significantly more hysteroscopic polypectomies were performed under general anaesthesia in non-teaching hospitals in the Netherlands. This may reflect a positive evolution towards more diagnostic and operative procedures without or under local/regional anaesthesia also in non-teaching hospitals.

Responding hysteroscopists from the Netherlands perform more hysteroscopic procedures in the office setting compared to respondents in Flanders. This is in agreement with our finding that responding hysteroscopists from the Netherlands more often dispose of an office setting. No difference was found between teaching and non-teaching hospitals and this is in contrast with Timmermans et al. who showed that, back in 2003, significantly more hysteroscopic polypectomies were performed in an office setting in teaching hospitals [7]. Again, this may reflect a positive trend towards more office hysteroscopy in non-teaching hospitals.

For both office and operating room hysteroscopic polypectomy Dutch hysteroscopists responded that they more often use fine instruments (scissors/forceps, bipolar) and hysteroscopic morcellation compared to their Flemish colleagues. The same was found for bipolar instruments with a fine diameter and hysteroscopic morcellation for myomectomy in both setting. Once more this highlights the need for a better reimbursement for office hysteroscopic procedures and appropriate instruments in Flanders.

2. Strengths and limitations

We conducted a large questionnaire containing many variables related to hysteroscopy in Flanders and the Netherlands, through both gynaecologic societies simultaneously, questioning both gynaecologist who do and do not perform hysteroscopy themselves. The current ideas on hysteroscopy and the diffusion of hysteroscopic procedures in Flanders have not been published before, and no comparison with the neighbouring Netherlands was possible until now.

Despite several reminder mailings our response rate was relatively low. Due to the many questions our survey was quite time-consuming, especially for the hysteroscopists (estimated at 20 min for the whole questionnaire), and due to administrative regulations in the Netherlands, only two reminder mailings could be sent compared to three reminder mailings in Flanders. Both may have impacted our response rate, especially in the Netherlands. In comparable previous studies response rates were much higher. For example, Timmermans et al. had a response rate of 73%, but they focused only on hysteroscopic polypectomy and their survey was very brief. Van Dongen et al. had a response rate of 80% but their survey was directed to gynaecological departments and not to individual gynaecologists [7, 9]. Evidently, the e-mail load now is much higher and electronic questionnaires are more common than 14-15 years ago.

Our results come from a questionnaire and therefore cannot be extrapolated to the general population of gynaecologists, and need to be interpreted with caution. However, in our data analysis we have corrected for all clinically important baseline characteristics of the respondents (such as experience, type of hospital, hysteroscopists versus non-hysteroscopists).

Because of the many variables in our database, we are aware of the possibility of type I errors as well as the possibility of over-fitting.

Conclusion

Overall, many of the responding gynaecologists prefer hysteroscopic techniques for the diagnosis and treatment of intrauterine pathology. Hysteroscopy has become more accessible due to the innovations of the last 20 years as well as the improved education resulting in more hysteroscopic procedures being performed by, or else preferred by, recently graduated gynaecologists. Nowadays, in treating intrauterine pathology the focus is on less invasive or harmful techniques and preservation of the uterus. Still, the Flemish gynaecologists appear more hesitant in choosing hysteroscopy over curettage in treating polyps and placental remnants compared to their Dutch colleagues. And although the respondents indicate IUD placement as option number one for treating HMB in patients without further reproductive desire, hysterectomy is as favoured as hysteroscopy for treating type II myomas, especially outside of teaching hospitals or when referral to a colleague performing hysteroscopy is necessary.

As the majority of the different hysteroscopic procedures are performed by responding hysteroscopists, centralisation is not so apparent.

Owing to the disposal of an office setting and proper reimbursement, responding hysteroscopists from the Netherlands have more expertise in performing office hysteroscopy. This is reflected in their treatment and instrumentation preferences. In Flanders there is no financial incentive of office hysteroscopy, and therefore less disposal of an office setting, especially outside of teaching hospitals. The preferences of Flemish gynaecologists, according to what is common and what is feasible, still go towards admitting patients for hysteroscopy.

Further research highlighting the cost effectiveness of office hysteroscopy is needed to obtain more financial support, as well as research to optimise patient comfort during an office procedure.

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Nederlandse Samenvatting

Minimaal invasieve procedures, zowel voor diagnostische als voor therapeutische doeleinde, zijn populair.

Binnen de gynaecologie is de hysteroscopie een minimaal invasieve methode, en tevens de gouden standaard, om de uteriene caviteit te onderzoeken en ingeval van pathologie te behandelen. Deze techniek is zodanig ontwikkeld dat steeds meer hysteroscopische procedures ambulant zouden kunnen uitgevoerd worden.

De ontwikkelingen en vernieuwingen inzake hysteroscopie voltrekken zich pas sinds 1990. Voordien stond men eerder weigerachtig t.o.v. de techniek omwille van de nodige infrastructuur, het financiële aspect, de moeizame leercurve en de beschikbare alternatieven.

In Nederland zijn reeds 5 enquête onderzoeken verricht om de diffusie en het gebruik van hysteroscopie na te gaan. In Vlaanderen werd nooit eerder dergelijk onderzoek gepubliceerd.

Deze enquête richt zich tot erkende gynaecologen met lidmaatschap van de Nederlandse of Vlaamse Verenging voor Obstetrie en Gynaecologie en heeft als doelstelling de huidige ideeën alsook het gebruik inzake hysteroscopie in kaart te brengen.

De respons ratio voor Nederland was 15.4%% (91/591) en voor Vlaanderen 27.0% (158/586).

De hysteroscopische techniek lijkt de voorkeur te hebben om intra-uteriene afwijkingen te diagnosticeren en te behandelen. In Vlaanderen lijkt er nog wat terughoudendheid te zijn voor het gebruik ervan in de behandeling van poliepen en placentaresten.

De enquête toont een grote diffusie voor diagnostische en basic hysteroscopische ingrepen. Hysteroscopie maakt nu deel uit van de opleiding waardoor de minder ervaren gynaecologen meer vertrouwd zijn met deze procedure en bijgevolg een voorkeur hebben voor de techniek.

Een ambulante setting is eerder aanwezig in Nederland t.o.v. Vlaanderen. Dit weerspiegelt zich in het groter aantal hysteroscopische procedures die ambulant worden uitgevoerd in Nederlands, alsook in de instrument keuze.

Samengevat, de behandeling van intra-uteriene afwijkingen focust zich meer op minimaal invasieve procedures en op het behoudt van de uterus. Verder onderzoek naar hysteroscopie in de ambulante setting is nodig met de nadruk op het financiële aspect en op het patiënten comfort om de implementatie ervan, met name in Vlaanderen, te ondersteunen.

Bijlagen

Appendix S1

Hysteroscopie in Vlaanderen en Nederland (Be)

Inventarisatie van de toepassing van hysteroscopie in Vlaanderen en Nederland

Beste collega,

Deze enquête peilt naar de kennis en het gebruik van hysteroscopie in Vlaanderen en Nederland, en kadert binnen een masterproef- en doctoraatsonderzoek.

Uw deelname, volledig vrijblijvend en anoniem, bestaat uit het invullen van een elektronische vragenlijst waarin gepeild wordt naar welke hysteroscopische procedures u uitvoert, en, indien van toepassing, enkele specifieke vragen over deze ingrepen.

Indien u geen hysteroscopische ingrepen uitvoert, vragen we u vriendelijk om de vragenlijst toch in te vullen. Ook deze informatie is belangrijk. Naargelang uw antwoorden zal de vragenlijst automatisch aangepast zijn.

Het invullen van de enquête neemt zo'n 10 tot 20 minuten van uw tijd in beslag.

Hartelijk dank voor Uw deelname,

Tjalina Hamerlynck (Gynaecoloog UZ Gent) en Steffi van Wessel (ASO Gynaecologie en Verloskunde UGent)

onder begeleiding van Steven Weyers (Diensthoofd Vrouwenkliniek UZ Gent, promotor) en Dick Schoot (Gynaecoloog Catharina Ziekenhuis Eindhoven, gastprofessor UGent, co-promotor)

Deze studie werd voorgelegd aan en goedgekeurd door een commissie voor Medische Ethiek. In geen geval dient u deze goedkeuring te beschouwen als een aanzet tot deelname aan deze studie.

In overeenstemming met de nationale wetgeving zal uw persoonlijke informatie vertrouwelijk behandeld worden.

Deelname aan het onderzoek is vrijwillig. U kan weigeren om deel te nemen zonder hiervoor een reden op te geven. Als u wenst deel te nemen, gelieve dan bijhorende vragenlijst in te vullen.

Er zijn 72 vragen in deze enquête

Informatiebrief en informed consent

[]

Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?

*

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ja, ik geef toestemming
- nee, ik geef geen toestemming

Algemeen deel

Gelieve deze enquête in te vullen, ongeacht of u hysteroscopie uitvoert

[]Waar bent u werkzaam? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- In Vlaanderen
- In Nederland
- Andere:

[]In welk type ziekenhuis bent u werkzaam? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Universitair ziekenhuis
- Niet-universitair ziekenhuis - opleidingsziekenhuis
- Niet-universitair ziekenhuis - geen opleidingsziekenhuis

[]Welke hysteroscopische ingrepen worden in uw ziekenhuis uitgevoerd? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Selecteer alle mogelijkheden:

- Diagnostische hysteroscopie
- Verwijderen/herpositioneren IUD
- Poliepresectie
- Myoomresectie
- Endometriumablatie (1ste generatie (hysteroscopische endometriumresectie) en/of 2de generatie (thermische ballon,...))
- Septumresectie

- Verwijderen placentarest
- Adhesiolyse
- Sterilisatie
- Andere:

[]Hoeveel erkende gynaecologen uit uw dienst verrichten minstens één van eerdergenoemde hysteroscopische ingrepen? (assistenten niet meegerekend) *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Vul uw antwoord(en) hier in:

- aantal erkende gynaecologen die hysteroscopie uitvoeren

- wat is het totaal aantal gynaecologen in uw dienst

[]Verricht u zelf één of meerdere van eerder genoemde hysteroscopische procedures? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- ja
- nee

[]Wat is uw leeftijd? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]In welk jaar bent u afgestuurd als gynaecoloog? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

In dit veld mogen alleen cijfers ingevoerd worden.

Hebt u één of meerdere hysteroscopische opleidingen/cursussen gevolgd na uw erkenning als gynaecoloog?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- nee
- ja

[]Gelieve de naam en de tijdsduur van de cursus(sen) in te vullen. *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'ja' bij vraag '9 [A7]' (Hebt u één of meerdere hysteroscopische opleidingen/cursussen gevolgd na uw erkenning als gynaecoloog?)

Vul uw antwoord hier in:

[]Van welke endoscopische verenigingen bent u lid? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Selecteer alle mogelijkheden:

- Geen
- Bijzondere Interessegroep Gynaecologische Endoscopie (BIG GE) van de Vlaamse Vereniging voor Obstetrie en Gynaecologie (VVOG)
- Werkgroep Gynaecologische Endoscopie (WGE) van de Nederlandse Vereniging voor Obstetrie en Gynaecologie (NVOG)
- Nederlandse Vereniging voor Endoscopische Chirurgie (NVEC)
- European Society for Gynaecologic Endoscopy (ESGE)
- American Association of Gynaecologic Laparoscopists (AAGL)
- Andere:

[]Indien u door middel van echografie een intra-uteriene afwijking vermoedt, voert u (of laat u) dan in eerste instantie een (water/gel)contrastechografie uit(voeren)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Nooit
- Af en toe
- Altijd

[]Indien u door middel van echografie een intra-uteriene afwijking vermoedt, voert u (of laat u) dan een diagnostische hysteroscopie uit(voeren)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Nee
- Ja, enkel na voorafgaande (water/gel)contrastechografie
- Ja, al dan niet aanvullend aan een (water/gel)contrastechografie
- Ja, zonder voorafgaande (water/gel)contrastechografie

[]Aan welke procedure geeft u de voorkeur bij poliepverwijdering? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Curettage
- Hysteroscopie

[]Voor welke myoomtypes verricht u (of laat u) een hysteroscopische myoomresectie (verrichten)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Selecteer alle mogelijkheden:

- Geen
- Type 0 (0% in de wand, volledig intra-cavitair)
- Type I (<50% in de wand, grotendeels intra-cavitair)
- Type II (>50% in de wand)

[]Aan welke procedure geeft u de voorkeur ingeval van een type II myoom en vervulde kinderwens (mits uiteraard akkoord van patiënte)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Hysteroscopische verwijdering
- Hysterectomie

[]Aan welke procedure geeft u de voorkeur ingeval van menorragie bij vervulde kinderwens in afwezigheid van intra-uteriene afwijkingen? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Levonorgestrel-IUD
- 1ste generatie endometriumablatie (hysteroscopische endometriumresectie)
- 2de generatie endometriumablatie (thermische ballon)
- Hysterectomie

[]Indien u echografisch een placentarest vermoedt, welke aanvullende diagnostiek verricht u nog (of laat u nog verrichten)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Selecteer alle mogelijkheden:

- Geen
- Doppler echografie
- (water/gel)contrastechografie
- Diagnostische hysteroscopie
- Andere:

[]Welke techniek geniet uw voorkeur voor het verwijderen van een placentarest? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Curettage
- Hysteroscopische verwijdering

[]Welke curettagetechniek geniet uw voorkeur voor het verwijderen van een placentarest? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Scherpe curettage
- Scherpe curettage onder echogeleide
- Stompe curettage
- Stompe curettage onder echogeleide
- Zuigcurettage
- Zuigcurettage onder echogeleide

[]Welk minimuminterval hanteert u na het einde van de zwangerschap als u door middel van curettage een placentarest verwijdert (of laat verwijderen)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Geen minimuminterval
- Minstens 6w
- Minstens 8w
- Minstens 10w

[]Welk minimuminterval hanteert u na het einde van de zwangerschap als u door middel van hysteroscopie een placentarest verwijdert (of laat verwijderen)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze

enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Geen minimuminterval
- Minstens 6w
- Minstens 8w
- Minstens 10w

Hysteroscopie deel

[]

Welke hysteroscopische ingrepen voert u zelf uit?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Selecteer alle mogelijkheden:

- Ik verricht geen hysteroscopie (meer)
- Diagnostische hysteroscopie
- Verwijderen/herpositioneren IUD
- Operatieve hysteroscopie
- Andere:

[]Welke operatieve hysteroscopische procedures voert u uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Selecteer alle mogelijkheden:

- Poliepresectie
- Myoomresectie
- Endometriumresectie (1ste en/of 2de generatie)
- Septumresectie
- Verwijderen placentarest
- Adhesiolyse
- Sterilisatie
- Andere:

[]Gedurende hoeveel jaar na uw erkenning voert u reeds eerder genoemde hysteroscopieën uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?) *en* Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

[]Maakt u gebruik van agentia om de baarmoederhals voor te bereiden voor een hysteroscopie waarbij geen dilatatie nodig (hysteroscoop met een smalle diameter)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?) *en* Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Altijd
- Af en toe
- Nooit

[]Maakt u gebruik van agentia om de baarmoederhals voor te bereiden voor een hysteroscopie waarbij dilatatie nodig is (hysteroscoop met brede diameter)? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?) *en* Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Altijd
- Af en toe
- Nooit

[]Indien u eendiagnostische hysteroscopie wilt doen in welke setting voert u deze ingreep dan meestal uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ambulant
- Dagopname
- Opname

[]Indien u hysteroscopischeen IUD wil herpositioneren of verwijderen, in welke setting voert u deze ingreep dan meestal uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ambulant
- Dagopname
- Opname

[]Indien u een operatieve hysteroscopie wil doen, in welke setting voert u deze ingreep dan meestal uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ambulant
- Dagopname
- Opname

[]Welk type anesthesie gebruikt u meestal bij een diagnostische hysteroscopie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Geen
- Lokale
- Sedatie
- Regionale
- Algemene

[]Welk type anesthesie gebruikt u meestal bij een operatieve hysteroscopie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Geen
- Lokale
- Sedatie
- Regionale
- Algemene

[]Op welke manier brengt u de scoop meestal binnen bij een diagnostische hysteroscopie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Vaginoscopie
- Speculum

[]

Indien u de diagnostische hysteroscoop plaatst met behulp van een speculum, dilateert u dan de baarmoederhals?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '33 [H11]' (Op welke manier brengt u de scoop meestal binnen bij een diagnostische hysteroscopie?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ja
- Af en toe
- Nee

Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?) *en* Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ja
- Nee
- Andere:

[]Wat is het gemiddeld aantal ambulante hysteroscopieën dat u per jaar uitvoert? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was 'Ja' bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Wat is het gemiddeld aantal hysteroscopieën dat u per jaar uitvoert in het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?) *en* Antwoord was 'Ja, ik geef toestemming' bij vraag '1 [IC1]' (Geeft u toestemming om, anoniem, aan deze enquête deel te nemen?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel diagnostische hysteroscopischeprocedures voert u ambulant gemiddeld per jaar uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

Hoeveel diagnostische hysteroscopische procedures voert u gemiddeld per jaar uit op het operatiekwartier?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische procedures voor het herpositioneren of verwijderen van een IUD voert u gemiddeld per jaar ambulant uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische procedures voor het herpositioneren of verwijderen van een IUD voert u gemiddeld per jaar uit op het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '23 [H1]' (Welke hysteroscopische ingrepen voert u zelf uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische poliepresecties voert u gemiddeld per jaar ambulant uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische poliepresecties voert u gemiddeld per jaar uit op het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Welk type instrumentarium gebruikt u voor hysteroscopische poliepresectie in de ambulante setting? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Selecteer alle mogelijkheden:

- Ik voer geen ambulante poliepresectie uit
- Schaar/forceps
- Poliepsnaar
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectopscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Welk instrumentarium gebruikt u voor hysteroscopische poliepresectie in het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- Ik voer geen hysteroscopische poliperesecties uit op het operatiekwartier
- Schaar/forceps
- Poliepsnaar
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectoscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Indien u een hysteroscopische poliepresectie ambulant uitvoert, welke grens (in cm) hanteert u qua poliep afmeting? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische poliepresecties uit
- Geen grens
- 1cm
- 2cm
- 3cm
- 4cm

[]Hoeveel hysteroscopische myoomresecties voert u ambulant gemiddeld per jaar uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

Hoeveel hysteroscopische myoomresecties voert u gemiddeld per jaar uit op het operatiekwartier?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Welk type instrumentarium gebruikt u in de ambulante setting voor een hysteroscopische myoomresectie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische myoomresecties uit
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectoscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Welk type instrumentarium gebruikt u in het operatiekwartier voor een hysteroscopische myoomresectie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- Ik voer geen hysteroscopische myoomresecties uit in het operatiekwatier
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectoscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Welke grens (cm) qua myoom afmeting hanteert u voor een ambulante hysteroscopische myoomresectie? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische myoomresectiet uit
- Geen grens
- 1cm
- 2cm
- 3cm
- 4cm

[]Hoeveel endometriumablatio's (1ste en/of 2de generatie) voert u ambulant gemiddeld per jaar uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel endometriumablatio's (1ste en/of 2de generatie) voert u gemiddeld per jaar uit op het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

[]Welk type endometriumablatie voert u uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- 1ste generatie (hysteroscopische endometriumresectie)
- 2de generatie (thermische ballong, ...)

Ingeval van een 1ste generatie endometriumablatie, maakt u gebruik van een unipolaire resectoscoop?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '54 [H31]' (Welk type endometriumablatie voert u uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Altijd
- Af en toe
- Nooit

[]

Ingeval van een 1ste generatie endometriumablatie, maakt u gebruik van een bipolaire resectoscoop?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was '1ste generatie (hysteroscopische endometriumresectie)' bij vraag '54 [H31]' (Welk type endometriumablatie voert u uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Altijd
- Af en toe
- Nooit

[]Ingeval van 2de generatie endometriumablatie, welk(e) type(s) gebruikt u? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '54 [H31]' (Welk type endometriumablatie voert u uit?)

Selecteer alle mogelijkheden:

- Thermische energie
- Microgolven
- Bipolaire elektrische energie
- Laser
- Cryo ablatie
- Vrij vocht op hoge temperatuur
- Andere:

[]Hoeveel hysteroscopische septumresecties voert u ambulant uit per jaar? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische septumresecties voert u uit op het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Welk type instrumentarium gebruikt u voor een hysteroscopische septumresectie gebruikt u in de ambulante setting? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische septumresectie uit
- Schaar
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectoscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator
- Andere:

[]

Welk type instrumentarium gebruikt u voor een hysteroscopische septumresectie op het operatiekwartier?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- Ik voer geen hysteroscopische septumresectie uit op het operatiekwartier
- Schaar
- Laser
- Bipolaire instrumenten metr een fijne diameter (zoals bv. Versapoint)
- Unipolaire resectoscoop
- Bipolaire resectoscoop
- Hysteroscopische morcellator

- Andere:

[]Hoeveel hysteroscopische adhesiolyses voert u ambulant gemiddeld per jaar uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische adhesiolyses voert u gemiddeld per jaar uit op het operatiekwatier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Tot welke gradatie voert u een ambulante adhesiolyse uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische adhesiolyses uit
- Milde adhesies
- Matige adhesies
- Ernstige adhesies

[]Welk type instrumentarium gebruikt u voor een hysteroscopische adhesiolyse in de ambulante setting? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

Selecteer alle mogelijkheden:

- Ik voer geen ambulante hysteroscopische adhesiolyses uit
- Schaar/forceps
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)

- Resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Welk type instrumentarium voor een hysteroscopische adhesiolyse gebruikt u in op het operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- Ik voer geen hysteroscopische adhesiolyse op het operatiekwartier uit
- Schaar/forceps
- Laser
- Bipolaire instrumenten met een fijne diameter (zoals bv. Versapoint)
- Resectoscoop
- Hysteroscopische morcellator
- Andere:

[]Van welke beeldvormingstechnieken maakt u tijdens een hysteroscopische adhesiolyse gebruik? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Selecteer alle mogelijkheden:

- Geen
- Echografie
- Radiografie
- Laparoscopie
- Andere:

[]Hoeveel hysteroscopische sterilisaties voert u ambulant gemiddeld per jaar uit? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Hoeveel hysteroscopische sterilisaties voert u gemiddeld per jaar uit op de operatiekwartier? *

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]

Hoeveel hysteroscopische verwijderingen van een placentarest voert u per jaar ambulant uit?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '35 [H15]' (Beschikt u over een setting om ambulante hysteroscopische procedures uit te voeren?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]

Hoeveel hysteroscopische verwijderingen van een placentarest voert u per jaar uit op het operatiekwartier?

*

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

In dit veld mogen alleen cijfers ingevoerd worden.

Vul uw antwoord hier in:

-

[]Welke hysteroscopische techniek geniet uw voorkeur voor het verwijderen van een placentarest?

Beantwoord deze vraag alleen als aan de volgende voorwaarden is voldaan:
Antwoord was bij vraag '24 [H1a]' (Welke operatieve hysteroscopische procedures voert u uit?)

Kies maximaal één antwoord

Selecteer alle mogelijkheden:

- Hysteroscopie met paktang
- Resectoscopie met geactiveerde lus
- Resectoscopie met koude lus
- Hysteroscopische morcellatie
- Andere:

Hartelijk dank voor Uw deelname!

Steffi van Wessel (ASO Gynaecologie en Verloskunde UGent)

Tjalina Hamerlynck (Gynaecoloog UZ Gent)

Steven Weyers (Diensthoofd gynaecologie UZ Gent)

Dick Schoot (Gynaecoloog Catharina Ziekenhuis Eindhoven, gastprofessor UGent, co-promotor)

Verstuur uw enquête
Bedankt voor uw deelname aan deze enquête.

Table S 2 Respondent's demographical data

			NL			FL			T	Non-T
			T (n = 58)	Non-T (n = 33)	p	T (n = 111)	Non-T (n = 47)	p	NL vs FL p	NL vs FL p
Age					.40			.25	.54	.19
	Median		47	45		46	48			
	P25		40	39		39	42			
	P75		56	53		54	56			
	Minimum		31	34		24	31			
	Maximum		64	61		75	66			
Experience					.59			.30	**.01**	**<.01**
	Median		12	9		15	17			
	P25		4	4		9	10			
	P75		20	16		24	26			
	Minimum		0	0		0	1			
	Maximum		31	25		43	36			
Gynaecologists per team					**<.01**			**<.01**	**.02**	.07
	Median		13	7		10	6			
	P25		10	5		7	5			
	P75		18	7		16	7			
	Minimum		7	4		3	3			
	Maximum		30	14		40	18			
Percentage of gynaecologists performing hysteroscopy per team					**<.01**			**.01**	**<.01**	.15
	Median		50.0%	80.0%		75.0%	100.0%			
	P25		33.3%	50.0%		46.7%	62.5%			
	P75		66.7%	100.0		100.0%	100.0%			
	Minimum		5.7%	7.7%		0.0%	25.0%			
	Maximum		100.0%	100.0%		100.0%	100.0%			
Hysteroscopy performing gynaecologists					.86†			.06†	**.01†**	.68†
	Yes	N	55	31		88	43			
		%	94.8%	93.9%		79.3%	91.5%			
Membership endoscopic association					.45†			.06†	**<.01†**	**<.01†**
	Yes	N	38	19		32	7			
		%	65.5%	57.6%		28.5%	14.9%			
Additional hysteroscopic education					.54†			.25†	.84†	.88†
	Yes	N	26	17		48	25			
		%	44.8%	51.5%		43.2%	53.2%			
Years of hysteroscopic experience since graduation	Total N		55	31	.54	88	43	.24	.84	.05
	Median		12	8		10	14			
	P25		3	3		1	9			
	P75		16	16		20	17			
	Minimum		0	0		0	1			
	Maximum		26	31		30	30			

significant p-value < .05, all p values are from the Mann-Whitney U test unless otherwise specified

† p value from the Chi-square test

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

P25 = percentile 25, P75 = percentile 75

Table S 3 Logistic regression analysis results of respondent's preferences regarding hysteroscopy for diagnosis and treatment of intrauterine pathology and AUB

		Adjusted					
		NL vs. FL			T vs. Non-T		
		OR	95% CI	p	OR	95% CI	p
SIS in addition to ultrasound in case of suspicion of intrauterine pathology	Yes	17.7	7.7 - 48.3	< .01	1.0	0.5-1.8	.87
Diagnostic hysteroscopy in addition to ultrasound in case of suspicion of intrauterine pathology	Yes						
(wheter or not in addittion to SIS) (*)	NL				[a]		
	FL				3.9¨	0.9 - 20.2	.08
Preferred technique for polypectomy	Hysteroscopy	12.5	2.5 - 229.1	< .01	1.3	0.5 - 3.2	.64
	Curettage						
Hysteroscopic resection as treatment for a type 0 myoma	Yes	1.6	0.7 - 3.8	.28	1.0	0.5 - 2.2	.92
Hysteroscopic resection as treatment for a type I myoma	Yes	1.9⁺	0.8 - 5.1	.17	1.3⁺	0.6 - 3.0	.49
Hysteroscopic resection as treatment for a type II myoma	Yes	1.3¨	0.7 - 2.3	.40	3.0¨	1.6 - 5.6	< .01
Preferred treatment for type II myoma in women without reproductive desire	Hysterectomy	0.7⁺	0.4 - 1.2	.20	0.5⁺	0.3 - 0.9	.02
	Hysteroscopy						
Preferred treatment for AUB-HMB in women without reproductive desire	Hysterectomy	[b]			[b]		
	Conservative						
Preferred technique for removal of placental remnants	Hysteroscopy	16.8⁺	4.9 - 105.9	< .01	1.5⁺	0.7 - 3.0	.33
	Curettage						
Minimum time interval between end of pregnancy and removal of placental remnants by curettage	None or less than 6 weeks	0.4	0.2 - 0.7	< .01	0.6	0.3 - 1.1	.08
Minimum time interval between end of pregnancy and removal of placental remnants by hysteroscopy (*)	None or less than 6 weeks						
	NL				0.2	0.1 - 0.7	.01
	FL				0.9	0.4 - 2.1	.85

significant p-value < .05, all p values are from binary logistic regression analyses unless otherwise specified

(*) OR adjusted for interaction between country/region and type of hospital

¨ OR hysteroscopists significantly higher

⁺ OR significantly different according to experience

[a] respondents from non-teaching hospitals in the Netherlands always perform a diagnostic hysteroscopy in case of suspicion of intrauterine pathology

[b] almost nobody in the sample performs hysterectomy as first choice for HMB in women without reproductive desire

NL = the Netherlands, FL = Flanders

T = teaching hospital, non-T = non-teaching hospital

SIS = saline infusion sonohysterography

AUB-HMB = abnormal uterine bleeding - heavy menstrual bleeding

Table S 4 Hysteroscopic procedures performed by the respondents

		NL						FL					
		T			Non-T			T			Non-T		
		Total N	N	%	Total N	N	%	Total N	N	%	Total N	N	%
Procedures performed by responding hysteroscopists	Diagnostic hysteroscopy	51			29			82			40		
			50	98.0%		28	96.6%		75	91.5%		38	95.0%
	IUD removal / repositioning	51			29			82			40		
			47	92.2%		26	89.7%		66	80.5%		30	75.0%
	Polypectomy	44			28			73			32		
			44	100.0%		28	100.0%		73	100.0%		32	100.0%
	Myomectomy	44			28			73			32		
			43	97.7%		27	96.4%		69	94.5%		27	84.4%
	Endometrial ablation (type I and II)	44			28			73			32		
			30	68.2%		27	96.4%		64	87.7%		24	75.0%
	Septum resection	44			28			73			32		
			14	31.8%		6	21.4%		52	71.2%		17	53.1%
	Placental remnant removal	44			28			73			32		
			44	100.0%		28	100.0%		62	85.0%		28	87.5%
	Adhesiolysis	44			28			73			32		
			25	56.8%		11	39.3%		44	60.3%		15	46.9%
	Sterilisation	44			28			73			32		
			20	45.5%		11	39.3%		8	11.0%		1	3.1%

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

IUD = intrauterine device

Table S 5 Logistic regression analysis results of respondent's preferences regarding the preparation phase, setting and type of anaesthesia for hysteroscopic procedures and their performed hysteroscopic procedures

		Adjusted					
		NL vs. FL			T vs. Non-T		
		OR	95% CI	p	OR	95% CI	p
Diagnostic hysteroscopy		2.7	0.6 - 18.5	.19	0.7	0.1 - 2.5	.55
IUD removal / repositioning		2.7	1.2 - 7.2	**.02**	1.2	0.5 - 2.8	.61
Polypectomy		[a]			[a]		
Myomectomy		4.3	1.0 - 30.3	.05	3.1	0.8 - 12.7	.10
Endometrium ablation (type I and II) (*)							
	NL				0.1	0.0 - 0.4	**< .01**
	FL				2.0	0.6 - 6.1	.24
Septum resection		0.2	0.1 - 0.4	**< .01**	1.8	0.9 - 3.8	.08
Placental remnant removal		[b]			[b]		
Adhesiolysis		0.8	0.4 - 1.5	.46	1.6	0.8 - 3.1	.15
Sterilisation		9.4+	4.1 - 23.7	**< .01**	1.8+	0.8 - 4.3	.19
Agents for cervical preparation before a hysteroscopic procedure *without* dilation (small diameter)		0.4	0.2 - 0.9	**.01**	1.2	0.6 - 2.4	.58
Agents for cervical preparation before a hysteroscopic procedure *with* dilation (larger diameter)		0.5	0.3 - 0.8	**.01**	1.2	0.6 - 2.1	.67
Preferred setting for diagnostic hysteroscopy	Admission	0.2	0.1 - 0.3	**< .01**	0.3	0.2 - 0.7	**< .01**
Preferred setting for operative hysteroscopy	Admission	0.2	0.0 - 0.5	**< .01**	0.8	0.3 - 2.4	.74
Preferred type of anaesthesia for diagnostic hysteroscopy	Sedation, regional or general	0.2+	0.1 - 0.3	**< .01**	0.5+	0.2 - 1.1	.09
Preferred type of anaesthesia for operative hysteroscopy	Sedation, regional or general	[c]			[c]		
Preferred entrance technique in case of diagnostic hysteroscopy	Speculum	0.02	0.0 - 0.1	**< .01**	0.7	0.3 - 1.7	.46
No setting for office hysteropscopy present		0.1+	0.0 - 0.2	**< .01**	0.4+	0.2 - 0.9	**.02**

significant p-value < .05, all p values are from binary logistic regression analyses unless otherwise specified

(*) OR adjusted for interaction between country/region and type of hospital

+ OR significantly different according to experience

[a] all responding hysteroscopists perform hysteroscopic polypectomy

[b] all responding hysteroscopists in the Netherlands perform hysteroscopic removal of placental remnants

[c] all responding hysteroscopists from Flanders prefer sedation, regional or (mainly) general anaesthesia for operative hysteroscopy

NL = the Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

IUD = intrauterine device

Table S 6 The number of hysteroscopic procedures performed in the office setting per year

		NL										FL									
		T (n=55)					Non-T (n=31)					T (n=88)					Non-T (n= 43)				
		Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum
Number of hysteroscopic procedures in the office setting per year		50	26	100	0	300	65	30	100	0	250	50	15	120	0	1.000	25	6	100	0	320
	Diagnostic procedures	30	15	50	0	150	38	20	70	0	250	50	10	100	0	700	25	6	70	0	200
	IUD removal / repositioning	10	5	20	0	100	13	10	25	0	100	5	0	15	0	53	1	0	5	0	25
	Polypectomies	15	2	30	0	100	20	5	29	0	150	0	0	10	0	120	0	0	5	0	35
	Myomectomies	0	0	5	0	20	0	0	5	0	30	0	0	0	0	30	0	0	0	0	12
	Endometrial ablations (type I and II)	0	0	15	0	75	0	0	20	0	80	0	0	0	0	70	0	0	0	0	56
	Septum resections	0	0	0	0	5	0	0	0	0	5	0	0	0	0	120	0	0	0	0	10
	Adhesiolysis	1	0	4	0	15	0	0	2	0	35	0	0	4	0	60	0	0	0	0	3
	Sterilisations	0	0	10	0	50	0	0	15	0	50	0	0	0	0	5	0	0	0	0	0
	Placental remnants removals	3	0	10	0	60	2	0	8	0	20	0	0	3	0	40	0	0	0	0	8

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

IUD = intrauterine device

P25 = percentile 25, P75 = percentile 75

Table S 7 Logistic regression analysis results of data regarding hysteroscopy in the office setting

		Adjusted					
		NL vs. FL			T vs. Non-T		
		OR	95% CI	p	OR	95% CI	p
Hysteroscopic procedures performed in the office setting		1.7*	0.6 - 4.9	.35	0.7*	0.2 - 2.0	.51
	Diagnostic procedures	1.1*	0.4 - 2.8	.92	0.7*	0.2 - 2.0	.52
	IUD removal / repositioning	2.9*	1.3 - 6.8	.01	0.8*	0.3 - 1.8	.53
	Polypectomies	7.2*	3.4 - 16.3	< .01	0.9*	0.4 - 2.1	.82
	Myomectomies	3.4	1.5 - 7.9	< .01	0.8	0.3 - 1.8	.54
	Endometrial ablations (type I and II)	6.0	2.5 - 16.1	< .01	1.3	0.5 - 3.1	.62
	Septum resections	0.5	0.2 - 1.2	.13	1.5	0.5 - 5.1	.43
	Adhesiolysis	2.1*	1.0 - 4.5	.05	2.2*	1.0 - 5.1	.06
	Sterilisations	9.6	3.6 - 30.4	< .01	1.7	0.7 - 4.3	.28
	Placental remnants removals	2.7	1.5 - 6.1	< .01	1.6	0.7 - 3.4	.25
Instrumentation for polypectomy ∓							
	Scissors / forceps	7.3	3.4 - 16.3	< .01	1.7	0.7 - 3.9	.22
	Polyp snare	10.0*	2.3 - 70.6	< .01	4.1*	0.9 - 29.6	.06
	Laser	[a]			[a]		
	Unipolar resectoscope	[b]			[b]		
	Bipolar resectoscope	0.4	0.1 - 1.6	.20	1.1	0.3 - 5.5	.88
	Bipolar instruments with fine diameter	5.5	2.3 - 14.4	< .01	1.6	0.7 - 4.1	.27
	Hysteroscopic morcellator	7.9	2.8 - 28.5	< .01	1.2	0.5 - 3.2	.74
Instrumentation for myomectomy ∓							
	Laser	[a]			[a]		
	Unipolar resectoscope	[a]			[a]		
	Bipolar resectoscope	.48	0.1 - 1.5	.21	0.8	0.2 - 2.7	.67
	Bipolar instruments with fine diame	7.9	2.0 - 53.3	< .01	1.5	0.4 - 6.0	.53
	Hysteroscopic morcellator	11.0	2.9 - 72.3	< .01	1.0	0.3 - 3.0	.95
Instrumentation for septum resection ∓							
	Scissors	0.2*	0.1 - 0.7	.01	0.4*	0.1 - 1.4	.15
	Laser	[a]			[a]		
	Unipolar resectoscope	[b]			[b]		
	Bipolar resectoscope	[b]			[b]		
	Bipolar instruments with fine diameter	2.1	0.6 - 9.1	.28	4.8	0.8 - 91.5	.09
	Hysteroscopic morcellator	[a]			[a]		
Instrumentation for adhesiolysis ∓							
	Scissors / forceps	1.7	0.8 - 3.5	.17	2.3	1.0 - 5.4	.04
	Laser	[a]			[a]		
	Resectoscope	[b]			[b]		
	Bipolar instruments with fine diameter	4.3	1.2 - 21.1	.03	3.0	.07 - 20.4	.15
	Hysteroscopic morcellator	[a]			[a]		
Limit of polyp size for polypectomy	≤ 1cm	0.8	0.2 - 3.1	.76	0.8	0.2 - 2.9	.68
Limit of myoma size for myomectomy (*)	≤ 2cm						
	NL				[c]		
	FL				0.3	0.0 - 4.4	.39
Limit for adhesiolysis	Moderate	4.4*	1.0 - 26.0	.05	0.5*	0.1 - 2.8	.43

significant p-value = .05, all p values are from binary logistic regression analyses unless otherwise specified

(*) OR adjusted for interaction between country/region and type of hospital

* OR significantly different according to experience

[a] none of the respondents in the sample use this type of instrument

[b] almost none of the respondents in this sample use this type of instrument

[c] almost all of the responding hysteroscopists in the Netherlands prefer a myoma size of ≤ 2cm for office myomectomy

∓ multiple responses are possible

NL = the Netherlands, FL = Flanders

T = teaching hospital, non-T = non-teaching hospital

IUD = intrauterine device

Table S 8 The number of hysteroscopic procedures performed in the operating room per year

		NL										FL									
		T (n=55)					Non-T (n=31)					T (n=88)					Non-T(n=43)				
		Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum	Median	P25	P75	Minimum	Maximum
Number of hysteroscopic procedures in the operating room per year		30	20	50	0	250	30	20	40	10	200	50	30	80	0	500	50	30	100	5	320
	Diagnostic procedures	10	5	20	0	150	10	3	15	0	100	20	7	30	0	200	18	10	28	0	140
	IUD removal / repositioning	0	0	3	0	15	1	0	4	0	30	2	1	5	0	15	3	2	8	1	30
	Polypectomies	10	5	20	1	50	10	5	20	3	100	20	10	30	0	150	23	15	30	5	120
	Myomectomies	20	10	25	2	90	10	10	20	4	40	10	5	20	0	50	10	5	15	1	70
	Endometrial ablations (type I and II)	13	5	20	0	80	15	10	20	0	80	10	5	20	0	80	10	4	20	2	56
	Septum resections	2	1	5	0	5	2	2	3	2	5	3	2	5	0	40	2	1	5	1	30
	Adhesiolysis	3	2	10	0	20	1	0	5	0	5	5	2	5	0	50	3	1	5	0	15
	Sterilisations	0	0	0	0	75	0	0	0	0	20	0	0	3	0	6	1	1	1	1	1
	Placental remnants removals	5	5	10	0	25	5	3	5	0	15	8	3	15	0	30	5	2	6	0	20

NL = Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

IUD = intrauterine device

P25 = percentile 25, P75 = percentile 75

Table S 9 Logistic regression analysis results of data regarding hysteroscopy in the operating room

		Adjusted					
		NL vs. FL			T vs. Non-T		
		OR	95% CI	p	OR	95% CI	p
Hysteroscopic procedures performed in the operating room							
	Diagnostic procedures	0.8	0.3 - 2.5	.75	1.8	0.6 - 5.2	.31
	IUD removal / repositioning (*)						
	NL				0.7*	0.2 - 2.0	.47
	FL				[a]		
	Polypectomies	[b]			[b]		
	Myomectomies	[b]			[b]		
	Endometrial ablations (type I and II)	0.4	0.0 - 3.7	.39	0.5	0.0 - 4.6	.58
	Septum resections	[b]			[b]		
	Adhesiolysis	0.3	0.1 - 1.2	.10	2.4	0.6 - 9.3	.20
	Sterilisations	0.3	0.0 - 2.3	.24	0.9	0.1 - 8.1	.95
	Placental remnants removals	0.8	0.2 - 4.3	.76	1.5	0.3 - 7.5	.61
Instrumentation for polypectomy ¥							
	Scissors / forceps	2.1	1.1 - 4.0	.03	1.0	0.5 - 2.0	.93
	Polyp snare	2.9*	0.7 - 13.6	.14	1.9*	0.4 - 13.2	.44
	Laser	[c]			[c]		
	Unipolar resectoscope	0.9	0.4 - 2.1	.84	1.0	0.4 - 2.3	.92
	Bipolar resectoscope	0.5	0.3 - 1.0	.05	1.0	0.5 - 2.0	1
	Bipolar instruments with fine diameter	5.6	2.5 - 13.4	< .01	0.7	0.3 - 1.5	.31
	Hysteroscopic morcellator	11.0	3.8 - 40.2	< .01	3.0	1.1 - 9.9	.04
Instrumentation for myomectomy ¥							
	Laser	[d]			[d]		
	Unipolar resectoscope	0.7	0.3 - 1.6	.37	0.9	0.4 - 2.1	.76
	Bipolar resectoscope	0.6	0.3 - 1.3	.19	1.0	0.5 - 2.1	.96
	Bipolar instruments with fine diameter	6.0	2.2 - 18.4	< .01	1.8	0.7 - 5.5	.26
	Hysteroscopic morcellator	13.4	3.4 - 89.8	< .01	5.0	1.2 - 34.4	.02
Instrumentation for septumresection ¥							
	Scissors	0.7	0.2 - 1.6	.30	1.0	0.4 - 2.9	.95
	Laser	[c]			[c]		
	Unipolar resectoscope (*)						
	Netherlands				[e]		
	Flanders				3.4	0.9 - 17.6	.08
	Bipolar resectoscope	1.37	0.5 - 3.9	.56	0.6	0.2 - 1.8	.39
	Bipolar instruments with fine diameter	4.87	1.6 - 15.9	.01	2.2	0.7 - 9.2	.21
	Hysteroscopic morcellat	[c]			[c]		
Instrumentation for adhesiolysis ¥							
	Scissors / forceps	1.3	0.5 - 3.5	.60	2.3	0.9 - 6.2	.09
	Laser	[c]			[c]		
	Bipolar instruments with fine diameter	1.1	0.4 - 2.7	.91	1.3	0.5 - 3.7	.62
	Resectoscope	0.6	0.2 - 1.7	.37	1.4	0.5 - 4.9	0.53
	Hysteroscopic morcellat	[c]			[c]		

significant p-value < .05, all p values are from binary logistic regression analyses unless otherwise specified

(*) OR adjusted for interaction between country/region and type of hospital

* OR significantly different according to experience

[a] in non-teaching hospitals in Flanders all respondents perform hysteroscopic IUD removal or repositioning in the operating room

[b] all respondents perform this type of hysteroscopic procedure in the operating room

[c] none of the hysteroscopists use this type of instrument

[d] laser is only used amongst hysteroscopists in teaching hospitals in the Netherlands

[e] hysteroscopists in teaching hospitals in the Netherlands never use this type of instrument

¥ multiple responses are possible

NL = the Netherlands, FL = Flanders

T = teaching hospital, Non-T = non-teaching hospital

IUD = intrauterine device