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REVIEW

Consensus of best practice in intrauterine contraception in France

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ABSTRACT

Objective: Our aim was to provide a consensus of best practice in intrauterine contraception (IUC) for French practitioners.

Methods: A meeting of 38 gynaecologists was held to establish a consensus of best practice in IUC, using the validated nominal group (NG) method to reach consensus. Seventy questions were posed covering insertion, monitoring and removal of IUC devices. Two working groups were formed and all proposals were voted on, discussed and approved by the NG.

Results: Of the 70 questions asked, answers to only four failed to reach NG consensus. While, in general, the IUC practices of French gynaecologists are in line with international guidelines, some notable differences were identified: for example, when to use the levonorgestrel-releasing intrauterine system versus the copper intrauterine device; practice recommendations in the event of upper genital tract infections; and immediate postpartum insertion. Clinicians are encouraged to inform women about IUC, irrespective of their age or parity. In general, the wishes and characteristics of the woman must be the main criteria informing the choice of IUC, once all potential contraindications have been excluded and information about IUC shared.

Conclusions: This consensus paper is intended to update and standardise knowledge about IUC for health care professionals, to address any reticence about use of this contraceptive method.

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Introduction

In France, contraception has undergone rapid change, prompting an evaluation of current gynaecological practice in intrauterine contraception (IUC). Contraception is a major public health issue and has been the focus of a national strategic plan for sexual health since March 2017 [1]. The main objectives of this plan are to reduce the number of unwanted pregnancies and improve contraceptive choice [2]. The information given to women and the advice of a health care professional are essential to help women choose appropriate contraception, reducing as far as possible problems of compliance and thereby potentially reducing the number of unexpected pregnancies and abortions.

In France, the goal of the health barometer is to assess women's current contraceptive use and whether it has changed since 2010. The latest edition, published in 2017 [3], showed very good contraceptive coverage at all ages: 92% of women surveyed were using some method of contraception, and 60% of women between the ages of 15 and 24 years were using the contraceptive pill, making it the most common method of contraception in France. A gradual decrease in this rate was observed from the age of 25. IUC has become the primary method of contraception in those aged over 35 years (34.6%). Worldwide, IUC, classified as a long-acting reversible contraceptive (LARC) method, is used by over 150 million women, but many misconceptions, particularly about its appropriateness in nulliparity, hinder its use [4,5]. Indeed, in 2012, the FECOND study (Fécondité–Contraception–Dysfonctions sexuelles) revealed poor knowledge of the indications for IUC use. Fifty-four per cent of women interviewed thought that IUC was not suitable for nulliparas, as did 69% of gynaecologists and 84% of general practitioners interviewed [6]. However, a report published in 2009 recommended promoting LARC, including IUC, for all women of childbearing age in whom the method was not contraindicated [7]. These same recommendations are repeated in the World Health Organisation (WHO) guidelines [8,9] and in many other international guidelines [4,10,11].

Two types of IUC are currently available: the copper intrauterine device (Cu-IUD) and the levonorgestrel-releasing intrauterine system (LNG-IUS). Copper has several mechanisms of contraceptive activity: it exerts direct toxicity on spermatozoa; it reduces sperm motility; and it affects the cervical mucus, inhibiting the progression of sperm in the cervix. Copper may also induce an inflammatory action in the endometrium that interferes with implantation. The Cu-IUD is contraceptive and non-abortive. The LNG-IUS continuously releases the progestin levonorgestrel into the uterine cavity. Levonorgestrel induces endometrial atrophy and thickening of the cervical mucus. The LNG-IUS has a moderate systemic effect and may have an effect on the secretion of endometrial glycodelin A, a physiological inhibitor of fertilisation [12–14]. In addition to its contraceptive properties, the LNG-IUS has a therapeutic effect on dysmenorrhoea [15] and functional menorrhagia [16,17]. Only Cu-IUDs can be used as emergency

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contraception as the LNG-IUS is not currently approved for this indication.

Our purpose was to develop a current reference for good practice in IUC for French health care professionals (obstetricians and gynaecologists, general practitioners and midwives), taking into consideration not only national and international guidelines, but also the experience of French clinicians.

Methods

This expert opinion paper on good practice was developed following what is known as nominal group (NG) consensus methodology [18]. The NG consisted of a panel of 38 experts in IUC (a complete list is provided at the end of the article), representative of the various types of clinical practice in gynaecology (public hospital and private practice) and from all regions of France. The NG met on 29 September 2017 in Paris to develop a consensus of good practice in IUC. During a preparatory phase, the four authors, members of the steering committee (JPB, PDR, SH and DS), carried out an exhaustive review of the recent literature, on the basis of which they identified the question topics submitted to the NG.

As the number of issues was too great to be discussed during the 29 September meeting, the steering committee preselected 42 questions, which were circulated to the NG members for a first round of voting (Supplementary Text 1). Questions that did not reach consensus during the first round of voting were discussed at the NG meeting. Consensus was determined by the two-thirds rule (≥66% of votes required to confirm an answer).

Prior to the meeting, an exhaustive literature review was sent to participants to update their knowledge on the subject. The first session was an introductory talk on the current status of IUC, after which NG members were divided into two subgroups (19 in each) to discuss questions about IUC insertion, monitoring and removal. Each participant voted anonymously, based on individual experience and reading of the current literature, and the results were analysed and presented to the subgroup. Responses were then discussed by the subgroup members; some questions might have been rephrased during the discussion to clarify the point being discussed, in case of no consensus. In the same way, new questions could be proposed to include specific points emerging from the discussion, and then voted on by the subgroup members. If a question did not reach consensus after two rounds of voting during subgroup sessions, it was voted on again during the plenary session. During the plenary session, the answers obtained by the subgroups were submitted to the NG, and a final vote was carried out according to the two-thirds rule ('Do you agree: yes/no' for questions with consensus; the whole question again for those without consensus.) Failure to reach consensus was reported (Figure 1).

The list of questions posed during the NG meeting is available in Supplementary Text 2–5.

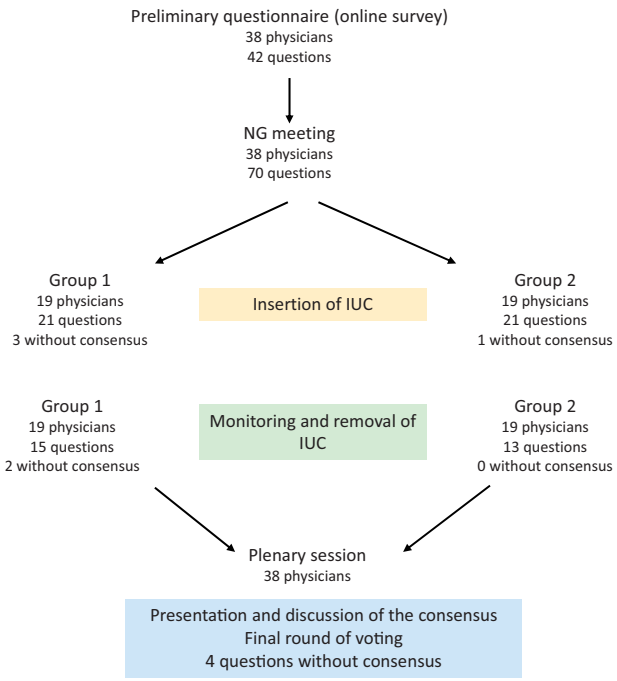

Figure 1. Methodology of the NG. The participants were divided into two working groups to address different questions. After the workshop participants voted, all the questions were presented and discussed with the NG during the plenary session. Final votes were definitive.

Results

Final results of the voting are summarised in Tables 1 and 2.

Inserting an IUC

Target population

The definition of the IUC target population proposed by the French Health Authority (*Haute Autorité de Santé*), 'Copper or levonorgestrel IUDs may be offered to all women (including nulliparous women), once the contraindications of this method, the risks of infection, the risk of ectopic pregnancy and high-risk situations have been excluded', was endorsed by the NG. The second statement from the French Health Authority recommendations, 'The levonorgestrel IUD is indicated as second line, after copper IUDs' was, however, not endorsed by the NG. Indeed, several publications have demonstrated high efficacy of the LNG-IUS [19–21], with a continuation rate that is equivalent to or greater than that of the Cu-IUD [22,23], and very high tolerability [24,25]. There is no evidence that the LNG-IUS should only be prescribed as second line in women for whom Cu-IUDs are contraindicated or poorly tolerated.

Contraindications and precautions

General contraindications. According to the NG, the woman's wishes and characteristics when considering an IUC method (Cu-IUD or LNG-IUS) should be the essential criteria for choosing the type of IUC, once all possible contraindications have been excluded. The NG considered the following to be contraindications to IUC use:

- Recent upper genital tract infection
- Fibroid with deformation of the uterine cavity
- Valvulopathy with risk of endocarditis

It is recommended that the woman consult her cardiologist and gynaecologist to determine the degree of

Table 1. Final results of the voting session regarding insertion of IUC.

Question	Response	Statement
Q1: How much time should pass before an upper genital tract infection is no longer considered recent?	1 month 3 months 6 months	No consensus
Q2: When inserting an IUC in a woman with a fibroid without deformation, is it preferable to use a Cu-IUD rather than an LNG-IUS?	No	Consensus
Q3: Is hepatocellular adenoma a contraindication to insertion of an LNG-IUS?	No	Consensus
Q4: Is malignant hepatoma a contraindication to insertion of an LNG-IUS?	Yes	Consensus
Q5: Is hepatic angioma a contraindication to insertion of an LNG-IUS?	No	Consensus
Q6: Is cholestasis a contraindication to insertion of an LNG-IUS?	No	Consensus
Q7: Is a functional ovarian cyst a contraindication to insertion of an LNG-IUS?	No	Consensus
Q8: Is endometriosis a contraindication to insertion of an LNG-IUS?	No	Consensus
Q9: Can an LNG-IUS be inserted in a woman taking enzyme inducers?	Yes	Consensus
Q10: Can an LNG-IUS be inserted in a woman taking immunosuppressants?	Yes	Consensus
Q11: Do you agree with the high-risk population definitions for upper genital tract infections below? Young woman (<25 years old), current or recent upper genital infection, multiple partners	Yes	Consensus
Q12: Should STI screening be routinely performed prior to IUC insertion in women in high-risk populations?	Yes	Consensus
Q13: Should the nulligravid/nulliparous distinction be taken into account?	No	Consensus
Q14: In your opinion, is insertion more difficult in nulliparous women?	No	No consensus
Q15: Is there a greater risk of expulsion in nulliparous women?	Yes	Consensus
Q16: If a progestin-only IUC is used, should a history of depressive disorders be considered?	Yes No Don't know	No consensus
Q17: When inserting an IUC, is cervical weakness a contraindication?	No	No consensus
Q18: When inserting an IUC, is a cured upper genital tract infection a contraindication?	No	Consensus
Q19: When inserting an IUC, is a history of ectopic pregnancy a contraindication?	No	Consensus
Q20: When inserting an IUC, is ongoing venous thrombosis a contraindication?	No	Consensus
Q21: When inserting an IUC, is valvulopathy a contraindication?	Yes	Consensus
Q22: Is routine antibiotic prophylaxis necessary?	No	Consensus
Q22c: Is there an elevated risk of infections beyond the first months postpartum? Subgroup rephrasing of the question	No	Consensus
Q23: Is the risk of expulsion elevated postpartum?	Yes	Consensus
Q24b: Is breastfeeding a contraindication to insertion? New question proposed by the subgroup	No	Consensus
Q25b: Excluding sepsis, is there a higher risk of infectious complications postabortion?	No	Consensus
Q26: Is the risk of expulsion higher immediately postabortion?	Yes	Consensus
Q27: Is the risk of uterine perforation higher post-abortion?	No	Consensus
Q28: Is a precancerous cervical lesion a contraindication to insertion of an IUC?	No	Consensus
Q29: Can a Cu-IUD be inserted in a woman taking immunosuppressants?	Yes	Consensus
Q30: Should a routine hysterometry be performed before insertion of an IUC?	No	Consensus
Q31: If a difficult insertion is expected (previous caesarean, for example), is it useful to prescribe an oestrogen?	No	Consensus
Q32: If insertion is impossible, should an alternative method of contraception be recommended?	No	Consensus
Q33: In the event of a difficult insertion, is a local anaesthetic recommended?	Yes	Consensus
Q34: Is a history of migraine (with or without aura) a contraindication to insertion of an LNG-IUS?	No	Consensus
Q35: Is acne a contraindication to insertion of an LNG-IUS?	No	Consensus
Q36: Can a Cu-IUD be inserted in a woman with Wilson's disease?	No	Consensus
Q37: Can an LNG-IUS be used as emergency contraception?	No	Consensus
Q38: In the event of a replacement, when is the best time to insert an IUC?	At any time during the cycle	Consensus
Q39: In the case of a first insertion, when is the best time to insert an IUC?	During the first part of the cycle	Consensus
Q40: Is the use of Pozzi forceps routine?	No	Consensus
Q41: In the event of a difficult insertion, is it helpful to prescribe anxiolytics?	No	Consensus

infectious risk; in all cases, antibiotic prophylaxis is required for IUC insertion [9].

The following factors were not considered to be contraindications to IUC use:

- Conisation
- Recurrence of thrush
- Obesity
- Bariatric surgery
- History of phlebitis
- Fibroid without deformation of the uterine cavity

In the presence of menorrhagia, the LNG-IUS is preferable to the Cu-IUD.

Specific contraindications to the LNG-IUS. The effects of levonorgestrel released by the LNG-IUS are predominantly local, affecting the endometrium. The NG considered that the presence of a hormone-dependent cancer was a specific contraindication to LNG-IUS use.

Conversely, functional ovarian cysts, deep venous thrombosis treated with anticoagulants, ischaemic cardiomyopathy, arterial hypertension, endometriosis, ongoing cholestasis and hepatic angioma were not contraindications to LNG-IUS use. WHO guidelines advise against LNG-IUS use in women with malignant hepatoma, hepatocellular adenoma and lupus with antiphospholipid antibodies [8]. In accordance with the guidelines, the NG was of the opinion that an LNG-IUS should be removed in women with

Table 2. Final results of the voting session regarding follow-up and removal of IUC.

Question	Response	Statement
Q1: Is it advisable to schedule a consultation after the first menstruation following insertion of an IUC?	Yes	Consensus
Q2: Is it necessary to recommend closer gynaecological follow-up of IUC users?	No	Consensus
Q3: Is it advisable to routinely perform a control ultrasound scan?	No	Consensus
Q4: In the case of persistent pain without dysmenorrhoea, is it advisable to look for another gynaecological cause?	Yes	Consensus
Q5: Should a woman with an LNG-IUS return if she experiences migraine with aura?	Yes	Consensus
Q6: If a pregnancy occurs in a woman using an IUC, is it advisable to remove the device?	Yes	Consensus
Q7: Is there a higher risk of complications if an IUC is left in place during pregnancy?	Yes	Consensus
Q8: Is it advisable to perform an ultrasound scan if the strings are not visible?	Yes	Consensus
Q9: In the case of upper genital tract infection, should an IUC be routinely removed before treatment?	Yes	Consensus
Q10: In the case of lower genital tract infection, should an IUC be routinely removed before treatment?	No	Consensus
Q11: Is it advisable to routinely carry out a hysteroscopy if the strings are not visible?	No	Consensus
Q12: Is perimenopause a factor to be considered in women with an IUC?	Yes	Consensus
Q12b: From the age of 45, is it useful to change a well-tolerated IUC?	No	Consensus
Q13: In the case of accidental discovery of actinomycetes on a smear, should antibiotic treatment be initiated while an IUC is in place?	No	Consensus
Q13b: In an asymptomatic woman, in the case of accidental discovery of actinomycetes on a smear, should antibiotic treatment be initiated while an IUC is in place?	No	Consensus
Q14: In an asymptomatic woman, in the case of accidental discovery of actinomycetes on a smear, should an ultrasound scan be done?	No	Consensus
Q15: In an asymptomatic woman, in the case of accidental discovery of actinomycetes on a smear, should a bacteriological cervical sample be taken and cultured?	No	Consensus
Q16: Is pronounced uterine malposition a risk factor for perforation?	Yes	Consensus
Q17: Is a difficult insertion a risk factor for perforation?	Yes	Consensus
Q18: Is it advisable to remove a Cu-IUD from a woman diagnosed with breast cancer?	No	Consensus
Q19: Can a Cu-IUD be inserted in a woman diagnosed with breast cancer?	Yes	Consensus
Q20: Is it advisable to remove an LNG-IUS from a woman diagnosed with breast cancer?	Yes	Consensus
Q21: Is it advisable to remove an IUC in a woman diagnosed with cervical cancer?	No	Consensus
Q22: Is it necessary to remove an IUC before conisation?	No	Consensus
Q23: Is there a higher risk of complications in the case of a forgotten IUC beyond the period of validity?	Yes	Consensus
Q24: Is it advisable to consider a hysteroscopy if the strings have disappeared?	No	Consensus
Q25: Is removing an IUC from a postmenopausal woman more difficult?	Yes	Consensus
Q26: In the case of a recurrent lower STI, should an IUC be removed? Subgroup reformulation of Q11	No	Consensus
Q27: Should a control ultrasound scan be routinely done if there is a history of expulsion?	No	Consensus
Q28: In the case of neutropenia $<500 \times 10^6$/l on chemotherapy, is it advisable to remove an IUC?	No	Consensus

lupus with antiphospholipid antibodies, ischaemic cardiomyopathy, hepatocellular adenoma, malignant hepatoma and severe cirrhosis. The LNG-IUS could be used in women taking enzyme-inducing agents.

The NG did not consider that a history of migraines (with or without aura) was a contraindication to LNG-IUS use. As recommended by the WHO [8], however, if migraines occurred or worsened after insertion, particularly in the case of migraines with aura, the LNG-IUS should be removed.

Finally, acne was not considered to be a contraindication to the LNG-IUS if a woman wished to use it, but the risk of developing acne was included in the patient information given prior to insertion. Indeed, in clinical studies, acne is generally considered to be the most frequent adverse event, as well as irregular bleeding [26–29]. In a clinical study by Dubuisson and Mugnier [28], premature removal of the LNG-IUS due to severe acne occurred in only two women (1% of the study population).

Specific contraindications to the Cu-IUD. The NG recommended that the Cu-IUD should not be used in women with Wilson's disease. An allergy to copper, however, was not a contraindication.

Importance of patient history. According to the NG, patient history to be considered prior to insertion (indications that may require follow-up or additional information provided by the woman) included a history of:

- Upper genital tract infections

  The NG did not reach consensus on the timeframe by which a treated upper genital tract infection might be considered cured and compatible with IUC use. It was decided that a period of 3–6 months was necessary. Patient history was particularly relevant in nulliparous women, especially young women.

- Sexually transmitted infection (STI)
- Ectopic pregnancy
- Menorrhagia
- Dysmenorrhoea
- Thrombocytopenia
- Haemostasis disorders
- Uterine surgery
- IUD expulsion
- Intolerance to a previous IUD
- Perforation by an IUD
- Pregnancy while using an IUD

A history of venous thrombosis did not require special precautions for IUC use. If the pathology, however, appeared with an LNG-IUS *in situ*, it should be removed

unless the woman was on anticoagulants, according to WHO guidelines [8].

Upper genital tract infections and STIs

According to the French Health Authority, the population at high risk of upper genital tract infection includes women with at least one of the following three factors: <25 years of age; a current or recent upper genital tract infection (any age); multiple partners. This definition was endorsed by the NG, although it was still considered to be too restrictive, as women under 25 were not the only group to be associated with high-risk behaviour.

Routine screening for STIs should be done before insertion of an IUC in women in a high-risk group. If the result of screening was positive, the NG recommended treating the woman before fitting an IUC.

Postpartum

The NG considered whether there might be an increased risk of infectious complications due to IUC insertion during the first month postpartum. The risk of expulsion and perforation would also be elevated. Although several guidelines, particularly those of the WHO, permit insertion of an IUC immediately postpartum [8,11], the NG recommended waiting until at least 4 weeks postpartum or until the routine postnatal consultation. In specialised hospital centres, the IUC could be fitted immediately after delivery, but in usual public practice the IUC should be fitted after about 1 month postpartum.

Although breastfeeding is a risk factor for uterine perforation [30], the NG did not consider that it constituted a contraindication to postpartum insertion.

Post-abortion

Excluding cases of sepsis, the NG considered that the risk of infectious complications due to IUC insertion was not elevated post-abortion, irrespective of whether the pregnancy was terminated medically or surgically. The risk of expulsion might be higher in immediate post-abortion insertion, but there was no increased risk of uterine perforation.

The NG recommended that after a medical pregnancy termination the IUC should be inserted at the follow-up visit 8–10 days post-abortion. In women with surgical abortion, the IUC might be inserted during the surgical procedure or at the follow-up visit 8–10 days post-abortion. IUC insertion was possible after a late termination of pregnancy.

Special cases

A precancerous cervical lesion was not a contraindication to IUC use. Breast cancer was not a contraindication to use of the Cu-IUD. The NG did not recommend against IUC insertion in women taking immunosuppressants.

Time and technique for insertion

Several premedication treatments have been tested to facilitate IUC insertion, including misoprostol, lidocaine and ibuprofen. None, however, has been shown to be significantly effective in reducing pain at the time of insertion or in facilitating insertion [31–36]. In some cases, misoprostol may increase the sensation of pain [37,38].

The NG found that pharmacological premedication before IUC insertion was not mandatory, excluding the possible prescription of anxiolytics for women experiencing significant anxiety at the prospect of the procedure, and not excluding good psychological counselling. Similarly, routine antibiotic prophylaxis was generally not required at the time of IUC insertion, as it had never been shown to be effective in reducing the risk of upper genital tract infections [39,40].

In cases where insertion was expected to be difficult (anterior caesarean section, history of conisation, etc.), it was not generally useful to prescribe an oestrogenic preparation. Moreover, in cases of difficult insertion, the NG did not recommend local anaesthesia, even though it was sometimes possible in a specialised setting. The NG did not recommend, but did not prohibit, routine hysterometry before IUC insertion. The use of Pozzi forceps was not generally required, except where there was marked uterine malposition, particularly uterine retroversion.

There was no difference between the Cu-IUD and the LNG-IUS in terms of when insertion should take place. If an LNG-IUS was inserted after day 7 of the cycle, however, additional contraception for 7 days was recommended [9,41]. For a first placement, the NG recommended inserting the IUC during the first part of the cycle if possible. A replacement IUC might be fitted at any time in the cycle.

Monitoring an IUC

Follow-up

The NG recommended a follow-up consultation after the first menses following insertion of an IUC, for guidance and reassurance, although it was neither routine nor mandatory. Medical examinations during this visit should only be made if there were problems or an adverse event. It was not necessary to recommend further gynaecological follow-up of women with an IUC beyond the usual annual follow-up consultation.

Routine performance of an ultrasound scan after IUC insertion was not recommended. Situations in which the NG recommended performing an ultrasound scan were:

- History of previous expulsion or intolerance to an IUC
- Presence of risk factors for perforation (painful or difficult insertion, scarred uterus, marked malposition of the uterus, etc.)
- IUC threads not visible

Moreover, the NG considered that the risk of perforation could be significantly reduced if the IUC were not 'forced' into the uterus during the insertion procedure or during hysterometry prior to insertion.

The NG recommended that women with an IUC should consult their gynaecologist in the event of:

- Migraines with aura (in those with an LNG-IUS)
- Persistent pelvic pain without dysmenorrhoea
- Irregular bleeding
- Unusual leucorrhoea

- Disappearance of the usually easily felt control threads
- Late menstruation (in those with a Cu-IUD)

Best practice in special cases

Incidental discovery of actinomycetes-like organisms. It was not recommended to routinely look for the presence of actinomycetes (commensal bacteria of the vaginal flora) during a follow-up consultation [41]. If actinomycetes were incidentally discovered in a smear, in a symptomatic woman with an IUC, the NG recommended removing the IUC and placing it in culture. It was not recommended in this case to leave the IUC in place while initiating antibiotic treatment. The NG did not recommend ultrasound or bacteriological cervical sampling in asymptomatic women with actinomycetes found on a smear test. The recommended action, in this case, was standard clinical and cytological monitoring.

Upper and lower genital tract infections. For an upper genital tract infection, the NG recommended that an IUC should always be removed prior to treatment. Conversely, for a lower genital tract infection or a recurrent lower STI, it was not recommended to remove an IUC prior to treatment, nor if there was no response to treatment.

Pregnancy during IUC use. IUC failure rates are extremely low, but in very rare cases pregnancy may occur (unwanted pregnancy rates are 0.6–0.8% for Cu-IUDs and 0.2% for the LNG-IUS [42]). In the occurrence of pregnancy, the first step should be to rule out an ectopic pregnancy [8].

The NG recommended removing an IUC in an intrauterine pregnancy if the woman wished to continue the pregnancy. Routine removal of the IUC was recommended if the strings were visible. Indeed, there was a higher risk of complications if the IUC were left in place during pregnancy, including spontaneous miscarriage, premature delivery, septic abortion and a risk of chorioamnionitis [43,44]. The woman should be warned that removing the IUC could carry a risk of spontaneous miscarriage [9].

Action in women with pathology

Diagnosis of breast cancer. It was not recommended to remove a Cu-IUD from a woman diagnosed with breast cancer; however, the NG recommended removal of an LNG-IUS, but without haste and after discussion with the oncologist, and taking into consideration appropriate alternative contraception.

Diagnosis of uterine cancer. Immediate IUC removal was not recommended in women diagnosed with cervical cancer. As an IUC was not an aggravating factor of cervical cancer, it might be left in place until treatment commenced. The IUC might, however, be removed at the request of the radiotherapist. The NG did not recommend removing an IUC before conisation.

Women on chemotherapy. In case of neutropenia ($<500 \times 10^6$/l polymorphonuclear neutrophils) or thrombocytopenia ($<30{,}000 \times 10^6$/l) in women on chemotherapy, it was recommended to postpone insertion of an IUC, but it was not recommended to remove an *in situ* IUC.

Removing an IUC

Timing of removal

According to the NG, an IUC might be removed at any time during the cycle if the woman wished to conceive. In women wishing to avoid pregnancy and requiring an alternative method of contraception, it was recommended to remove the IUC during menstruation or at the end of the menstrual cycle. Recommendations from the WHO about how to switch from IUC to other contraceptives methods are described by Curtis et al. [11].

When removing an IUC, the NG recommended performing an ultrasound scan only if the threads were not visible. For an IUC without visible threads, it was not recommended to routinely perform a hysteroscopy without first gently trying to remove the IUC using appropriate instruments.

Special cases

According to the NG, in women >45 years of age, it was not necessary to change a well-tolerated Cu-IUD, regardless of how long it had been in place. The lifespan of an IUC depends on the type used, ranging from 5 to 10 years for Cu-IUDs and from 5 to 7 years for the LNG-IUS [42].

There was probably a higher risk of infectious complications in forgotten IUCs that had been left in place for many years beyond the recommended period, particularly an increased risk of actinomycosis. Removal of an IUC in postmenopausal women might sometimes be more difficult than in premenopausal women. The difficulty could arise when removal was carried out very late after the menopause, and the thread or the IUC itself could break. According to the practical experience of the NG, removal might be easier following a short course of oestrogen treatment.

Discussion

During the NG meeting, only four out of 70 questions did not reach consensus. In addition, only a few points were not in line with international guidelines (WHO).

According to the NG, and in concordance with the French Health Authority and the WHO guidelines [4,8,10,42], IUC may be used in women irrespective of age, parity or previous pregnancy. The NG stated that, in practice, if IUC was correctly inserted, and well adapted to the woman's specific uterine dimensions, the risk of expulsion or intolerance in nulliparous women was no higher than that in multiparous women. Insertion might, however, be more difficult in women who had never been pregnant or who were nulliparous. Indeed, in a recent meta-analysis, Foran et al. [45] found that there was a higher risk of insertion failure among nulliparous women, though the evidence was of low quality.

Regarding general contraindications to IUC use, the NG did not reach a consensus on the question of cervical incompetence, the exact definition of which posed a problem. Currently, no reliable data are available on this topic, preventing agreement on a common definition. The NG considered that cervical incompetence should be taken into account in women seeking IUC (in postpartum situations, for example), but the degree of cervical weakness,

left to the clinician's judgement, would determine whether it was a contraindication to IUC use.

The NG did not reach consensus regarding LNG-IUS use in women with a history of depression. To date, few data are available on this subject. In their systematic review of the literature, Pagano et al. [46] did not identify any studies showing a link between hormonal contraception and worsening depressive or bipolar symptoms in women. Only one paper mentioned the possibility of psychological changes in women using the LNG-IUS [47]. Moreover, Merki-Feld et al. [48] published a critical analysis of this article, noting considerable bias and concluding that the levonorgestrel component of the LNG-IUS only rarely had a negative effect on mood. Very few users of the LNG-IUS had actually complained of depressive disorders, whereas the LNG-IUS had been available since 1997. For women with a history of severe depression, however, the authors recommended close clinical follow-up [48]. In any case, it is useful to ask potential users of the LNG-IUS about any history of depression during the pre-insertion consultation. On 26 October 2017, the Pharmacovigilance Risk Assessment Committee of the European Medicines Agency concluded that there was no medical evidence that the LNG-IUS was associated with depressive disorders [49].

The risk of developing an upper genital tract infection following IUC insertion is very low (<1%), regardless of whether the woman is considered at risk [50,51]. Infection is not related to the device itself but only occurs in the presence of an infection during the insertion procedure; the risk would thus be limited to the first 20 days after insertion. Beyond this period, the risk of infection reverts to that of the population without an IUC [52,53]. For upper genital tract infections, the daily practice of French gynaecologists is to recommend always removing an IUC before initiating treatment. This differs from the WHO guidelines, which recommend leaving the IUC in place during treatment unless there is no response to treatment [9,11]. As fear was expressed that an infection might worsen, with consequences for the woman's fertility, the NG recommended that the IUC be removed and cultured and bacteriological samples taken as soon as infection was detected, and appropriate treatment prescribed. Genital actinomycosis is a rare but potentially severe condition. It usually has a similar appearance to pelviperitonitis, febrile occlusion, or an ovarian or colon tumour [54]. Without treatment, adverse reproductive outcomes could occur following the development of pelvic inflammatory diseases, such as ectopic pregnancy, tubal factor infertility and chronic pelvic pain. These adverse outcomes are, however, largely debated and controversial [55–58].

Conclusions

There are several national and international guidelines, particularly those of the WHO, covering IUC which are regularly updated and have been universally adopted. These guidelines must, however, be interpreted at the national level in a way that reflects clinical practice. Owing to increasing use of IUC, it was felt necessary to evaluate current clinical practice in France. While, in general, the practice of French gynaecologists is in line with international guidelines, some notable differences were highlighted in the consensus process, regarding recommended practice in IUC use in women with an upper genital tract infection, and IUC insertion immediately postpartum.

The good IUC clinical practice presented by the NG may therefore complement international guidelines, which practitioners should continue to consult, taking into account what is done in this area by French gynaecologists while keeping in mind that IUC is, like any contraceptive method, constantly evolving.

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