



LARC in Teenagers: A Proper Option?

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Abstract

LARC are a very excellent option as contraceptive methods in teenagers. We designed a retrospective and prospective descriptive study which included the teenagers who were using a LARC with the purpose of a study which has a principal objective Knowledge of safety, effectiveness, patient acceptance and continuity tase by the LARC teenager users who are attended in our medical center. During the study period, we inserted 52 LARC in teenagers between 13 to 20 years old. As were ported, the IUD and the subdermal implant arm results both of them are safe and effective in teenagers. These are very effective because they don't depend on the user and these associate a minor undesirable pregnant and a minor voluntary abortion tase.

Keywords: LARC, teenagers, contraceptive methods.

1. JUSTIFICATION AND OBJECTIVES

The Long-Acting Reversible Contraceptive Methods are denominated as LARC. Some of them are the copper intrauterine device (IUD), the levonorgestrel intrauterine device (LNG IUD) which has different doses of gestagens and the subdermal implant arm.

Because of his long-acting, safety and effectiveness, they are a very excellent option as contraceptive methods in teenagers. But sometimes the gynecologist and the midwife don't offer them to the patient, maybe about their false convictions, major pain and difficulty in the IUD insertion if the patient is nullipara or the possibility of major complications as perforation uterine or inflammatory pelvic disease (these could affect the future fertility of the patient).

For all this, we propose a study which has a principal objective Knowledge of safety, effectiveness, patient acceptance and continuity tase by the LARC teenager users who are attended in our medical center.

We raised a review, as a secondary objective, with all the nowadays existing bibliography and the last and main recommendation published in the main scientific societies and then we compare them with our clinic results.

The results show high efficacy and satisfaction rates with LARC methods that is why we think that barriers to use of LARC by adolescents include patients' lack of familiarity with or understanding about the methods, potentially high cost of initiation, lack of access, low parental acceptance, and obstetrician-gynecologists' and other health care providers' misconceptions about the safety of LARC use in adolescents should be eliminated.

2. MATERIAL AND METHODS

We designed a retrospective and prospective descriptive study which included the teenagers who were using a LARC. The LARC were always inserted at the Family Planning Center called Ramon y Cajal in Zaragoza as a contraceptive method.

When the study was started, The Ramon y Cajal Family Planning Center was attending all reproductive and sexual healthcare women, who were living at the I and II Sector. The I Sector is integrated by 379.225 inhabitants, who 197821 are women and the II Sector is integrated by 188.539 inhabitants which 93708 are women.

Period study: we recollected all the patients datum from May of 2016 to December of 2017. The study was born in May of 2016, because it was the beginning complete financing of the all

LARC by de Social Security in the autonomous community of Aragon.

The study population was teenagers between 13 to 20 years old who chose a LARC as a contraceptive method and this one was inserted at The Ramon y Cajal Planification Center.

The LARC analyzed in the study included:

- The IUD copper Novaplus® T 380 Ag.
- The IUD liberating with 52 mg of levonorgestrel (Mirena®).
- The IUD liberating with 13.5 mg of levonorgestrel (Jaydess®).
- The subdermal implant arm implan on NXT® with 68 mg of etonogestrel.

Inclusion criteria: teenagers between 13 to 20 years old who chose one of these LARC as a contraceptive method and this one was inserted at The Ramon y Cajal Planification Center from May of 2016 to December of 2017 and were newly visited at the Center after the insertion of the LARC.

Exclusion criteria: patients who weren't contacted with us after the insertion were excluded from the study.

All the information about the patients and their datum were transcribed to an information base computerize. We used Statistic Process Social Sciences (SPSS) 20.0 for Windows (Copyright© SPSS Inc., 2006. Licencia Universidad de Zaragoza) to statistical analyses during the study period.

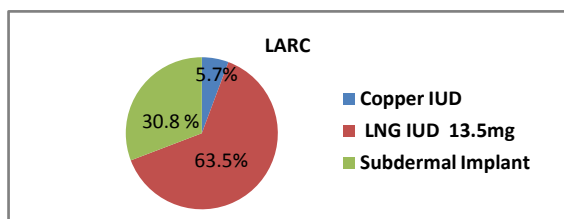
The normal or no distribution of the variables were calculated with Kolmogorov Smirnov test and signification statistical level was established with a $p < 0.05$.

3. RESULTS

During the study period, we inserted 52 LARC in teenagers between 13 to 20 years old.

The average age was 16.8 years old +/- 1.68 TD, and the main was 17 years old.

Picture1 shows the LARC that we inserted in the Planification Center.



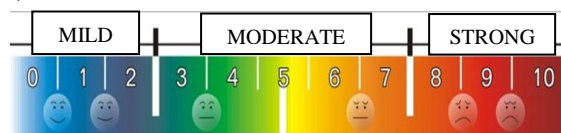
Picture1. Contraceptive methods chosen by users

During the follow-up, 5 patients didn't answer or they didn't come to the control medical dates

after the insertion. Of these patients, 2 were using a subdermal implant arm and 3 were using IUD, so these ones were excluded of the final study conclusion, but we used their age at the moment of the contraceptive method insertion.

There were static differences ($p=0.271$), which was calculated with U Mann Whitney, in the patient aged when they chose a LARC. The IUDs median age was 17.11 +/- 1.58 years old and the subdermal implant arm median age was 16.50 +/- 1.78. The subdermal implant arm age range was between 13 to 19 years old and for the IUD the age range was 13 to 20 years old.

We recognized the patient's pain during the insertion of the contraceptive method, so we used an analogic visual scale of 10 cm (Picture 2)



Picture2. Analogic Visual Scale of patient's pain during the contraceptive's insertion

The average pain that the patient felt at the insertion moment was 5.57 points +/- 2.20 with the subdermal implant arm and 6.03 +/- 2.36 with the IUDs, without significant differences between them ($p=0.538$ Student's t).

When we analyzed the information about the patient's pain whom IUD was inserted no significant differences were discovered between women older than 17 years old with younger than 17 years old ($p=0.85$ Student's t).

The insertion's difficulty was valued by the professional doctor (gynecologist) as easy or very easy in the 94% of the cases and in the 100% of the subdermal implant arm. In the last case, there were significant differences ($p=0.85$ Student's t).

There weren't major complications in none of the contraceptive methods which were used in the Center (Table1).

We reported the secondary effects while a contraceptive method was being used (Table2).

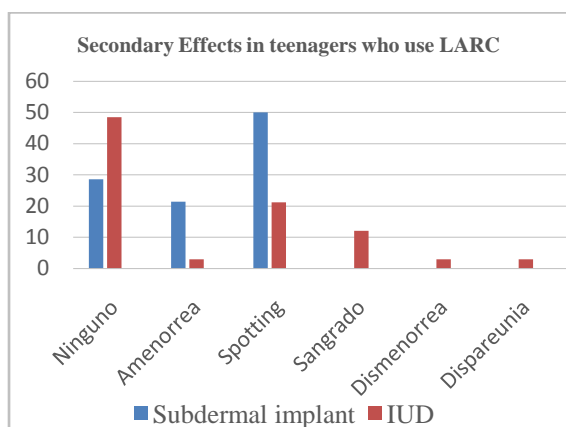
Table1. LARC Complications

LARC complications in teenagers		
	Subdermal implant arm	IUD
Pregnancy	0	0
Uterine perforation	-	0
IUD expulsion	-	0
IUD migration	-	0
Inflammatory Pelvic Disease	0	0

Table2. The Secondary effects of LARC in teenagers

The Secondary effects of LARC using in teenagers.		
	Subdermal implant arm	IUD
None	4 (28.6%)	16 (48.5%)
Amenorrhea	3(21.4%)	1 (3%)
Spotting	7(50%)	7 (21.2%)
Abundant Menstrual Bleeding	0	4(12.1%)
Dysmenorrhea	0	1(3%)
Dyspareunia	0	1(3%)

The secondary effects were referred by the 71.4% of the subdermal implant arm vs the 51.5% of the IUDs users, but no significant differences were reported ($p = 0.154$, Fisher).



Picture3. Secondary effects of LARC in teenagers

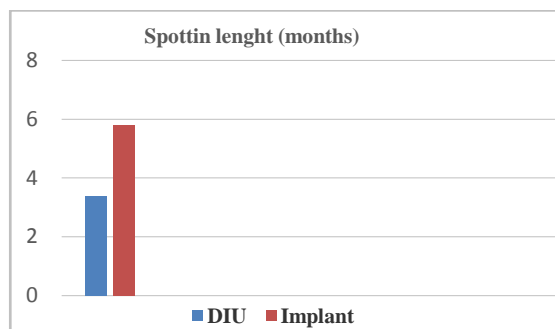
Excepting the amenorrhea with we consider it could be a positive secondary effect on the patient. The others secondary effects were reported by the women teenagers in a reality same of cases; which were reported by de 50% of implant users vs 48.5% of IUDs uses.

The spotting was referred by the 50% of implant users vs only the 21.2% of IUDs users.

The abundant menstrual bleeding was fundamentally referred using IUD popper, and it was reported in the 66.6 % of the patients vs only the 6.06 % of LNG IUDs users.

The spotting and his length was bigger in the implant users (about 5, 8 months of length) tan in the IUDs users (3, 4 months length)

The 100% of teenagers women are still using the same contraceptive method since the insertion at The Ramon y Cajal Center, not a single LARC has necessary been retired by major complications or patient’s request when a secondary effect has been reported such as persistent bleeding or pain.



Picture4. Spotting’s contraception method

The satisfaction scale with the contraceptive method in the 1-10 scale was of 8.7 +/- 1.6 in the IUDs users and of 7.86 +/- 2.0 in the implant users, without significant differences ($p = 0.095$, U of Mann Whitney). In both types of methods, the satisfaction scale was high about 8-9 points of the score with a maximum of ten points.

When we asked the teenager users if they would select the same contraceptive method again. The 75% of the users would replay the subdermal implants again, the 12.5% wouldn’t replay it and the other 12.5% no checked the question. In the IUDs users, the 81.5% would replay it one more time, the 5.6% wouldn’t replay it and the other 8.3% no checked the question.

4. DISCUSSION

The adolescence is a maturation process which takes place between the childhood and the adult’s life. It is started at the beginning of the puberty until the maturity. It is used to take place from 10 ten years old to 19 years old.

The 95% of pregnancies in the adolescence period aren’t planned or they aren’t wished by the teenager women, because of it could have a negative physical, emotional, economic or social impact in this teenagers. When the child is born the teenagers are still achieving consciousness and they are developing their adult personality, so it has major consequences in the teenagers such as familiar fights and

Although the teenager’s pregnancies might be apparently a few cases in Spain, in the 2016 year (INE National Statistic Institute dates), there were 7973 births in teenagers women as new mothers and there were 10.012 voluntary abrotations, the 90% of the pregnancy termination was requested by the teenagers. For all these reasons, we consider the teenager pregnancy a big problem for the society and it is still without a solution.

The medical information in this range of age is very important but it isn’t enough, because this

one no has an immediate effect in the teenagers and these women need to embrace their own idea and internalize that we learn by means of their experience. Also, we know that the teenager pregnant used a contraceptive method less frequently in their first sexual experience than in the adult age. And they usually used a contraceptive method in their sexual relation less effective than in adult age.

The LARC are contraceptive methods with high satisfaction and continuity rates in women users. The most of the published papers show that the women teenagers have a higher compliance with the LARC so this fact decreases undesirable pregnancy just as the voluntary interruption of pregnancy. For all these, we should give a good and reliable information to our patients about this long acting contraceptive methods in the Planification Center because these ones are more effective, but we can't forget that we should let know them about the other contraceptive methods too, so the teenagers will be able to decide the contraceptive method for their profile.

The ACOG (American College of Obstetrician and Gynecologist) reports in a paper review published in 2017 that the LARC are the most effective contraceptive methods with a high continuity tase and high satisfaction patient grade compared to others short contraceptive methods. In fact, the LARC are very safe so these ones are good alternative contraceptive methods in women teenagers.

The professional gynecologist could think the LARC aren't an attractive option to the teenagers but the CHOICE study rewarded by Secura et al, which included 1404 teenagers between 14 to 19 years old, showed that a good information about all contraception methods in women and eliminating monetary barriers, the 72% of teenagers chose a LARC as a contraceptive method. Nowadays Aragon is the only Autonomic Community in Spain that includes all LARC as funded, so the patient don't need to pay for them and the methods price won't be a barrier.

It's necessary to know these contraceptive methods and eliminate false myths above everything with the IUD use. The impossibility or difficulty insertion of the IUD in the nullipara women is based in none scientific evidence as to its reported in a Consensus Document of Long Contraceptive Methods published at SEGO

(Spain Society of Gynecology and Obstetrics) 2015.

The error contraceptive method insertion is very low as the studies report (2.1%-2.7%). In our Planification Center, all these ones have been inserted in every one of the women teenagers and the gynecologists described them as easy or very easy in the 94% of the cases. Neither exists a higher pain in nulliparas insertion, so the patients described the insertion IUD like a menstruation pain, in fact, our study reported a median pain point as moderate and with a good toleration by the patients.

The literature review doesn't report major cases of inflammatory pelvic diseases in teenagers when an IUD is used. The only increase risk of inflammatory pelvic diseases takes places in the first 20 days after the insertion, and the absolute risk is very low as a bacterium contamination in association with the IUD insertion (and no IUD alone). Although an antibiotic prophylaxis isn't recommended before IUD insertion, we Know that Gonochoco a Chlamydia infection is more common in teenagers so we suggest a Sexual Infection Test before the IUD insertion in these types of patients, and if the result of the test would be positive we recommended a 20 days antibiotic treatment without move away the IUD.

Also, it's known that infertility tase isn't higher in the IUD users in comparison with other contraceptive methods.

We analyzed the type of IUD which was chosen by the teenagers and their professional doctor, we inserted 91.6% of the LNG IUD 13.5 mg (Jaydess®). Maybe the main motive is his small cannula size of 3.8mm vs 4.4mm the LNG IUD 52 m (Mirena®) and the copper IUD. We thought that his smaller size makes the uterine insertion easier and makes light of pain insertion that the patient relate about it, as it's shown in the Nelson et al study, phase 2 study, which concludes that Jaydess has an easier significant insertion vs Mirena® (94% vs 86% cases, $p < 0.01$). In the first place, the Jaydess insertion was of 98.5% in the first effort and no need uterine dilatation was necessary for the 94.2% of the patient. The insertion was lower painful than in comparison with Mirena® (72.3% no painful and 57.9% lowly painful, $p < 0.01$). In addition the Gemzell-Danielson et al study, phase 3 study with LNG IUD 13.5 mg, the successful insertion took places at the first effort and in the 99.5% at the first + second effort.

As well as LNG IUD has a great advantage because of the lower quantity and the long menstrual bleeding and in addition it reduces the dysmenhorrea in comparison to the copper IUD. In the last ones is more common a painful and copious menstruation, and we should remind that these types of menstruations are normally more common in the teenagers. So the LNG IUD is recommended too in diseases that increased menstrual bleeding as Won Willebrand or thrombocitopenia.

The IUD expulsion in teenagers is infrequent. Prager et al, reported that the IUD expulsion is the same as parity (0-4.2%) and Veldhuis et al neither reported differences in IUD expulsion rates (0-1.2% year in the copper IUD and 0-0.2% LNG IUD), however other studies such as the Jatlaoui et al, describe an IUD rate a little high in nullipara women which use the copper IUD; so this and other reason to the LNG IUD insertion. In addition, this type of IUD is more effective than the copper IUD and it has a lower Pearl Rate.

When we analyzed the type of IUD we found that the LNG IUD 13.5 mg was chosen in all cases, because this one has enough hormonal doses for contraception and this shows a minor menstrual variations than with the LNG IUD 50 mg use. The main problem is that it's only last for three years as the subdermal implant arm.

In a few months, we will have the LNG IUD 19.5 mg in our Center, which lasts 5 years and his insertion cannula is so small as LNG IUD 13.5 mg. So we think that perhaps this new LNG IUD will become the most contraceptive method chosen by the teenagers.

Inside the subdermal implants arm, we reported that the half of the teenagers have had spotting during his use but it has a good tolerance by teenagers considering that none of these has asked to us for retiring it while the other patients (>20 years old) certainly are demanded. It's imperative to explain to the teenagers the bleed pattern so these patients will be relaxed and have a good information if they had any change in the menstrual bleed in the gestagens methods context.

As we reported in our, the IUD and the subdermal implant arm results both of them are safe and effective in teenagers. These are very effective because they don't depend on the user and these associate a minor undesirable pregnant and a minor voluntary abortion rate.

Despite the limitation of the size of our study the security of their use is validated by the main scientific societies, such as OMS, SEGO, SEC, ACOG, American Academy of Pediatrics y Society for Adolescent Health and Medicine, reporting a high satisfaction and continuity rate in teenagers.

The false myths mustn't determine to us when we recommend a contraceptive method so we must look for the best and the most appropriate method for each patient in a personalized way.

5. CONCLUSIONS

1. The LARC are safe and effective contraceptive methods in teenagers.
2. A low complication rate is associated with this type of users.
3. There are less undesirable pregnancies than with other contraceptive methods if these methods depend on the user.
4. Their use is guaranteed by the scientific societies.
5. High satisfaction and continuity rate with these contraceptive methods.
6. False myths mustn't determine the contraceptive method's choice when we recommend IUD method in teenagers.
7. We must look for the most appropriate contraceptive method in each woman and it must value in a personalized form.

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