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Reproductive health of adolescents and women after the artificial abortion. Potential ways of the reproductive health rehabilitation

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The article discusses one of the abortion consequences, namely chronic autoimmune endometritis resulting in sterility and a number of various pathological processes in the uterus and other reproductive organs. The authors make an attempt to evaluate efficiency of the therapeutic and preventive measures package aimed at the reproductive health rehabilitation in 13 teenage girls and 53 reproductive-age women after first pregnancy artificial abortions.

Keywords: adolescents girls, reproductive-age women, reproductive health, artificial abortion, sterility, endometritis.

Problem of abortion primarily makes a cause of problems of reproductive health in Russia and specifically in Republic of Sakha (Yakutia). Changes that are caused by abortion make influence on the young woman's health during all her life. Chronic and as a rule autoimmune endometritis is developed, that leads to not only to sterility, but to different pathological processes in the uterus and other organs of reproductive system. Persistent endometritis hinder normal implantation of fertilized ovum in the uterus wall, embryogenesis and in the end leads to various complications of pregnancy and birth. This way reproductive potential of the country is decreasing (Radzinsky V. E., Orazmuradov A. A., 2009).

We are trying to estimate efficiency of therapeutic activities complex, aimed on the recovery of reproductive health of 13 adolescents and 53 reproductive-age women, after first pregnancy artificial abortion.

Table 1

First pregnancy artificial abortion

Groups		n	first pregnancy artificial abortion.	
			absolute	%
Control	Adolescents	30	1	3,3
	Reproductive-age women	52	10	19,2
Yakutians	Adolescents	114	9	7,9*
	Reproductive-age women	110	23	20,9
Evenkiis	Adolescents	49	3	6,1*
	Reproductive-age women	98	20	20,4

Note: *p<0,05 – authenticity of differentiation is established comparing to control

As it can be seen from the data first-time pregnant reproductive-aged women's every fifth pregnancy led to an induced abortion, statistically important differences between groups are not detected. Among adolescent first pregnancy termination diagnosed among native women.

Therapeutic activities complex included:

- antiphlogistic therapy complex, concerning strict relevancy of antibacterial therapy prescription;
- hormonal contraception – usage of low-dosed oral contraceptives from the 1st day of the postabortion period according to the contraceptive scheme, not less than for 6 month.
- correction of intestine and vagina microbiocenosis;
- wide use of physiotherapeutic procedure.

In our research was used combination of small doses of alternating magnetic field and sinusoidal modulated current with intravaginal insertion of Lidaza and Dimexidum. Before conducting treatment course tampon with Lizada and Dimexidum was inserted inravaginally, then magnetotherapy was conducted (used low-frequency alternating magnetic field (AMF) of the device AMT-02 "Magniter", used sinusoidal current No. 5, then pulsatory current – No. 5, intensity of magnet field 30 mT, exposure time 15 minutes).

After AMF procedure without rest continued by sinusoidal modulated current in stimulating mode (alternating current mode – P1, type of work – PP, modulation rate – 50 hertz, modulation depth – 100%, current rate – up to contraction of front abdominal wall muscle under electrode, exposure time 10 minutes). Treatment course consisted of 10 daily procedures.

The reason to use magnetic field is that it has a strong positive anti-inflammatory and improving microcirculation effects, also absence of thermal exposure, that allows to use it in 2 hours after pregnancy termination. Treatment effect of sinusoidal modulated current is due to uterotonic, anti-inflammatory, defibrosing effects, and also their ability to improve trophic tissues. (Levchenko I. M., 2007)

According to the conducted therapy in the postabortion period all patients were divided in two subgroups: received therapeutical activities complex treatment and not.

Table 2

Grouping according to the conducted treatment

Groups		n	Treatment complex proposed	
			absolute	%
Control group	Adolescents	1	1	100
	Reproductive-age women	10	6	60
Yakutians	Adolescents	9	2	22,2
	Reproductive-age women	23	12	52,2
Evenkiis	Adolescents	3	1	33,3
	Reproductive-age women	20	11	55

Due to the low quantity of medical supervision of patients after surgical pregnancy interruption, patients were united in two groups according to their age and without regard to the nationality (Fig. 1).

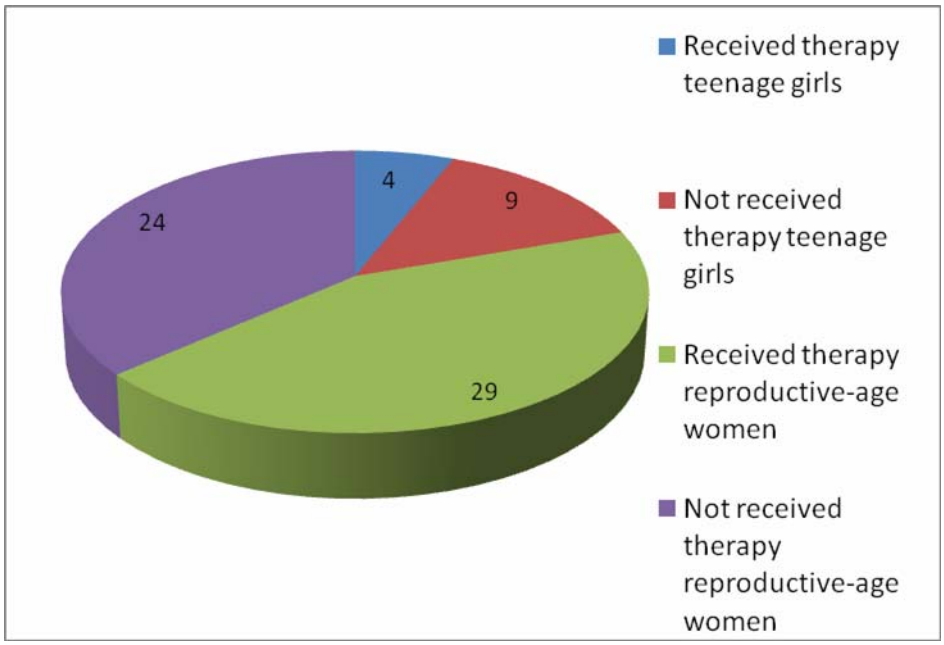


Figure 1. Grouping according to the conducted treatment

Analysis of the involutional processes of uterus on the third, sixth and eighth day after pregnancy termination has shown the relation to the rehabilitation activities (Table 3).

Table 3

Size of uterine body on the third day after the abortion

Groups		n	Size of uterine body, mm.		
			Lengh	Front-back	Width
Adolescents	Received therapy	4	68,1±0,43*	57,1±0,38*	58,1±0,32*
	Not received therapy	9	71,1±0,43	60,1±0,44	60,1±0,43
Women	Received therapy	29	70,4±0,46*	58,8±0,34	60,9±0,36
	Not received therapy	24	73,4±0,48	60,4±0,44	61,1±0,41

Note: *p<0,05 – authenticity of differentiation is established comparing to the not received therapy group

As it can be seen from the data, on the third day after the abortion size of the uterine body of teenage girls and reproductive-age women, who have received therapy during the post abortion period, was smaller comparing to the same parameters in the group, who hasn't received therapy. Significant difference can be registered while comparing all estimated size of uterine body of teenage girls, among reproductive-age women statistically significant differences could be

traced in comparison only of the length of uterus. When comparing the parameters of the uterus diagnosed reduction of the size of the uterus in adolescents when compared with women of reproductive age, which may indicate a more contractile activity of uterine muscles in this age group.

On the sixth day of post-abortion period decrease in all compared parameters is observed in comparison with the third day. (Table 4)

Table 4

Size of uterine body on the sixth day after the abortion

Groups		n	Size of the uterine body, mm		
			Lengh	Front-back	Width
Adolescents	Received therapy	4	57,1±0,33*	48,1±0,3*	49,1±0,32
	Not received therapy	9	60,1±0,32	54,1±0,24*	50,1±0,34
Women	Received therapy	29	58,4±0,36*	48,8±0,34	52,9±0,31*
	Not received therapy	24	61,3±0,38	51,4±0,32	55,1±0,37

Note: *p<0,05 – authenticity of differentiation is established comparing to the not received therapy group

On the sixth day was traced the similar trend of reduction of the uterus in girls and women receiving the proposed treatment.

On the eighth day the investigated parameters of the uterus in the groups receiving the proposed complex, no longer differed from the normative parameters of the not pregnant uterus (Table 5).

Table 5

Size of uterine body on the sixth day after the abortion

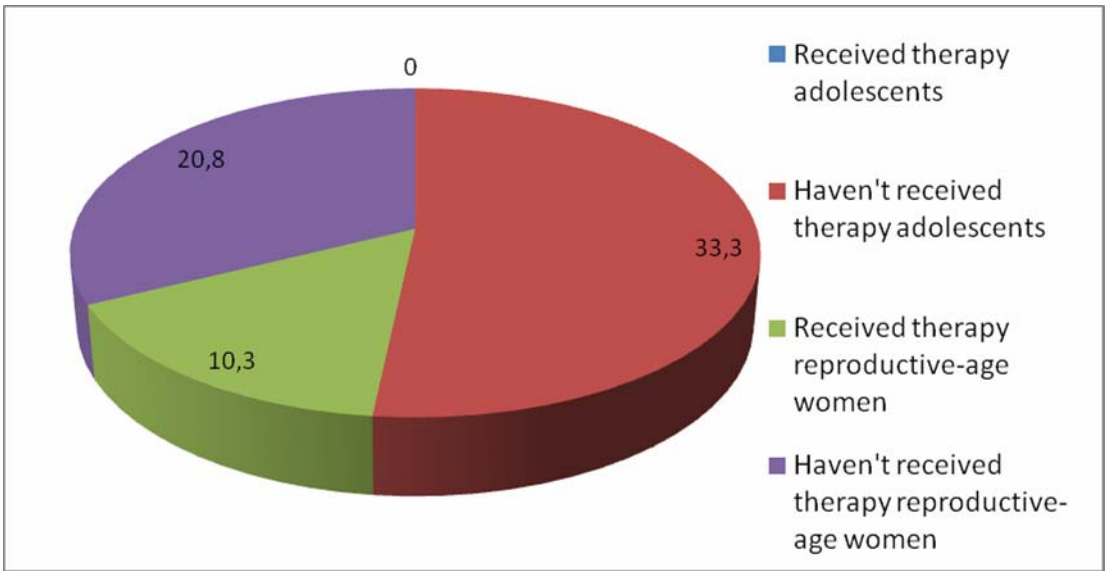
Groups		n	Size of the uterine body, mm		
			Lengh	Lengh	Lengh
Adolescents	Received therapy	4	47,1±0,33*	46,1±0,3*	44,1±0,32
	Not received therapy	9	57,1±0,32	52,1±0,24*	49,1±0,3
Women	Received therapy	29	48,9±0,23*	47,8±0,24*	50,9±0,27*
	Not received therapy	24	60,3±0,28	50,4±0,3	54,1±0,25

Note: *p<0,05 – authenticity of differentiation is established comparing to the not received therapy group

On the eighth day it was clearly traced statistically significant lag on all of the estimated parameters of uterus among girls and women, who have not received the therapy. In these groups uterus size on the eighth day was still increased.

On the eighth day 5 reproductive-age women (20,8%), who haven't received rehabilitation therapy, had clinical signs of acute endometritis. The similar clinical picture was diagnosed in 3 adolescents (33,3%), not received proposed therapy.

In the group of adolescents received proposed treatment complex was not diagnosed a single case of endometritis, but in the group of reproductive-age women acute endometritis was stated among 3 women (10,3%) (picture 3). All patients with acute endimetritis have received etiopathogenic therapy.



Picture 2. Frequency of post-abortion acute endometritis.

In the group of women, received proposed therapy but with developed post-abortion endometritis, all of them in anamnesis had chronic salpingo-oophoritis. It is obvious that artificial abortion became a starting procatarxis of exacerbation of chronic inflammation of the appendages and as a consequence of post-abortion endometritis.

On the whole conducted treatment complex, including hormone treatment and use of physiotherapy, allows to halve the frequency of complications such as "post-abortion endometritis".

The results indicate tonomotory and anti-inflammatory effects of our proposed rehabilitation complex.

Study of the hormonal status features after pregnancy termination in women who didn't use oral contraceptives was conducted in 1, 3 and 6 months after pregnancy termination.

Estimating follicle-stimulating hormones showed (Table 6) its level rehabilitation in adolescences in 6 months after the abortion, that is definitely later comparing to reproductive-aged women, who had FSH rehabilitated in 3 months.

Table 6.

Blood level of FSH (ME/l) in the early follicular phase

Group	n	Month		
		1	3	6
Haven't received therapy girls	9	27,4±2,4*	10,3±2,1*	6,1±1,5*
Haven't received therapy women	24	19,6±2,1	7,8±1,1	9,4±2,0

Note: *p<0,05 – authenticity of differentiation is established comparing to the women of reproductive age

Also significant increase of FSH level was stated in 1 and 3 months in adolescents in comparison to women of reproductive-age.

More intense changes are found in the content of luteinizing hormone in women with terminated pregnancy (Table 7).

Table 7

Blood level of LH (ME/l) in the early follicular phase

Group	n	Month		
		1	3	6
Haven't received therapy girls	9	17,4±2,2*	10,3±2,0	14,2±2,5*
Haven't received therapy women	24	12,6±2,0	8,8±1,0	10,4±2,0

Note: *p<0,05 – authenticity of differentiation is established comparing to the women of reproductive age

Studying of LH level in dynamics showed its increase in a month after pregnancy termination, authenticity of differentiation was traced in a group of adolescents. Gradually LH level was decreasing to the 3d month of supervision, but 2 teenage girls (22,2%) during 6 months after abortion LH peak was stated, reaching 20,5 ME/l.

Among women of reproductive age parasitic peaks of LH were diagnosed in 2 patients (8,3%), maximum rate of LH made 15,2 ME/l.

Studying of lactation hormone level (Table 8) on the 2nd – 3d day of the menstrual cycle, showed its rehabilitation during 6 months after abortion in

Table 8

Blood level of lactation hormone (ME/l) in the early follicular phase

Group	n	Month		
		1	3	6
Haven't received therapy girls	9	891,4±122,8*	609,7±132,1	304,7±39,5*
Haven't received therapy women	24	630,7±142,1	658,7±139,1	617,8±240,1

Note: *p<0,05 – authenticity of differentiation is established comparing to the women of reproductive age

the teenage girls. In the group of women of reproductive age lactation hormone level remained for 3 month moderately high in 17 (70,8%) women, in the group of adolescents in 5 (55, 5%).

In 6 month after pregnancy termination all adolescents had normal lactation hormone level, while reproductive-age women' hyperprolactinemia level remained the same in 9 (37,5%) (maximum rate of lactation hormone on the 2nd day of the menstrual cycle was 857,9 ME/l).

Estimation of progesterone level on the 22 – 24th day of the menstrual cycle, as an ovulatory menstrual cycle marker, has shown (Table 9), that

Table 9

Blood level of progesterone in (nmol/l) in the luteal phase.

Group	n	Month		
		1	3	6
Haven't received therapy girls	9	10,4±2,8	15,7±7,1	20,7±12,5
Haven't received therapy women	24	10,7±2,1	18,7±6,9	21,8±11,6

Note: *p<0,05 – authenticity of differentiation is established comparing to the women of reproductive age

On the 3rd month after artificial abortion ovulation regenerated. 2 girls (22,2%) had increased progesterone level over 20 nmol/l, among women of the reproductive age this number was definitely higher and made – 11 (45,8%)

In 6 months after conducted abortion progesterone level increase over 20 nmol/l was diagnosed in 4 (44,4%) girls and in 15 (62,5%) women of the reproductive age.

This way, artificial abortion of young girls anovular menstrual cycles are diagnosed more than in every second (55,6%).

Termination of first pregnancy among women of reproductive age leads to several other hormonal disorders – it is mostly dominated by moderate hyperprolactinemia - more than every third (37,5%) and anovulatory menstrual cycles diagnosed in 37.5% of women.

Evaluation of features for restoring gipotolamo-pituitary-ovarian function after 9 months in all patients who terminated first pregnancy, including receiving rehabilitative therapy, including use of low-dose OK for 6 months after the abortion, showed (Table 10) a statistically significant difference in its condition .

Table 10

Blood levels of FSH (IU / L), LH (IU / L) and prolactin (IU / L) in the early follicular phase.

Group		n	FSH	LH	Prolactin
Girls	Not received therapy	9	5,1±1,7	15,2±3,5	304,7±39,5
	Received therapy	4	3,0±1,4*	4,2±1,1*	206,4±41,5*
Women	Not received therapy	24	6,1±2,0	11,1±3,8	607,8±240,1*
	Received therapy	29	5,4±1,2	6,1±1,3*	417,8±280,1*

Note: *p<0,05 – authenticity of differentiation was established.

In the level of FSH statistically significant differences were found in a group of teenage girls, those girls who received treatment had a significantly lower FSH level. There was a similar situation with the level of LH: LH level was significantly higher among girls who were not receiving therapy.

There was a statistically significant increase in prolactin level among girls who were not receiving complex therapy, but its levels did not go beyond the normative values. The situation is different among women of reproductive age. We found no statistically significant differences in the levels of FSH, however, significant differences could be traced with respect to LH. LH levels were significantly higher in women who did not receive the proposed therapy.

In women of reproductive age there had been an increaseof prolactin levels. Among women who did not receive rehabilitative therapy, a statistically significant increase was stated when compared to the same factor in women receiving the proposed treatment. Although even in women of reproductive age who received therapy in postabortal period, prolactin levels

significantly exceeded the permissible standard values. This situation was due to detection of moderate hyperprolactinemia in 5 (17,2%) women. In the comparable group of hyperprolactinemia is diagnosed in more than a third (37,5%), which is 2,2 times higher when compared with women receiving therapy.

Determining the level of progesterone in the luteal phase in 9 months after abortion showed (Table 11) that

Table 11

Blood levels of prolactin (nmol / L) in the luteal phase.

Groups		n	Progesterone
Girls	Not received Therapy	9	22,9±14,5
	Received therapy	4	28,7±11,5*
Women	Not received Therapy	24	23,7±13,6
	Received therapy	29	32,9±16,2*

Note: *p<0,05 – authenticity of differentiation was established.

in girls and women of reproductive age progesterone levels did not change drastically when compared with its level, defined at 6 months after the abortion. In 9 months after the abortion increase of progesterone level above 20 nmol / L was diagnosed in 4 (44.4%) girls and 16 (66,6%) women of reproductive age who were not receiving the proposed treatment.

Among girls and women who have undergone rehabilitation, the increase in progesterone level above 20 nmol / L was diagnosed in significantly greater number of observations: in 3 women (75%) and 24 (82,7%).

Overall, these results demonstrate that the proposed complex of rehabilitation treatment after artificial abortion stimulates the recovery of two-phased menstrual cycle in the vast majority of patients, prevents the formation of menstrual disorders.

In addition to hormone research, a survey by the tests of functional status, in particular, the analysis of basal body temperature charts, as measured during 3 menstrual cycles (Fig. 3, 4). Study of the menstrual cycles, was performed 9 months after artificial abortion.

In adolescent girls basal temperature charts are as follows: among the last complex of rehabilitation treatment two-phase cycles occurred in 3 (75%), anovulation was found in 1 (25%) girls, and among who haven't received proposed therapy a two-phase menstrual cycle was diagnosed in 3 (33,3%), inadequate luteal phase (IDLF) was diagnosed in one in nine (11.1%), and more than every second (55,5%) - anovulation.

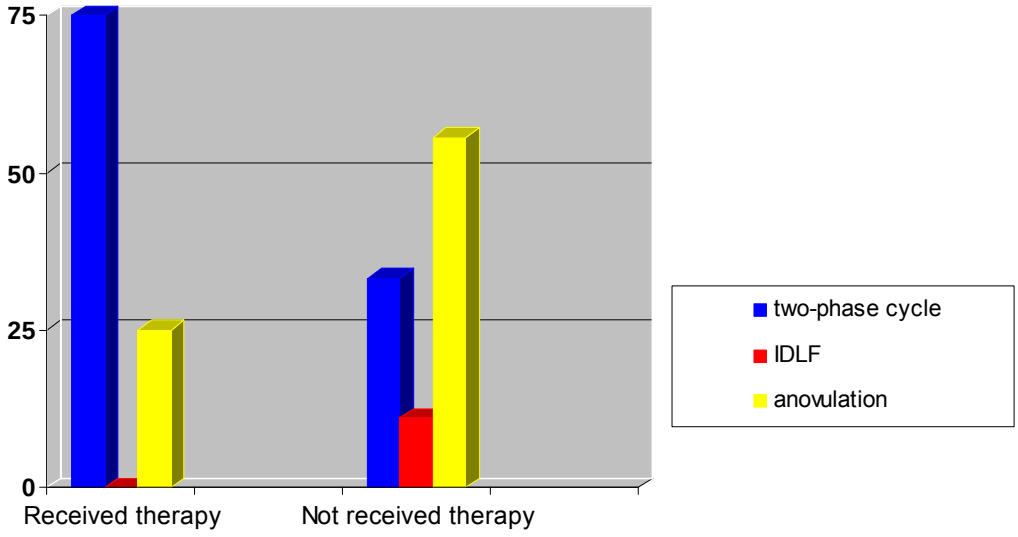


Fig. № 3. Characteristics of the teenage girls' menstrual cycle.

In women of reproductive age estimated basal body temperature charts showed that among the complex of rehabilitation treatment in the past two-phase cycles occurred in 24 (82,7%), IDLF syndrome - in 13,8% of women, anovulation was found in 1 (3.4%) , among those who have not undergone the proposed therapies a two-phase menstrual cycle was diagnosed in 10 (41,7%), IDLF syndrome was diagnosed in one in four (25%), and every third (33,3%) - anovulation.

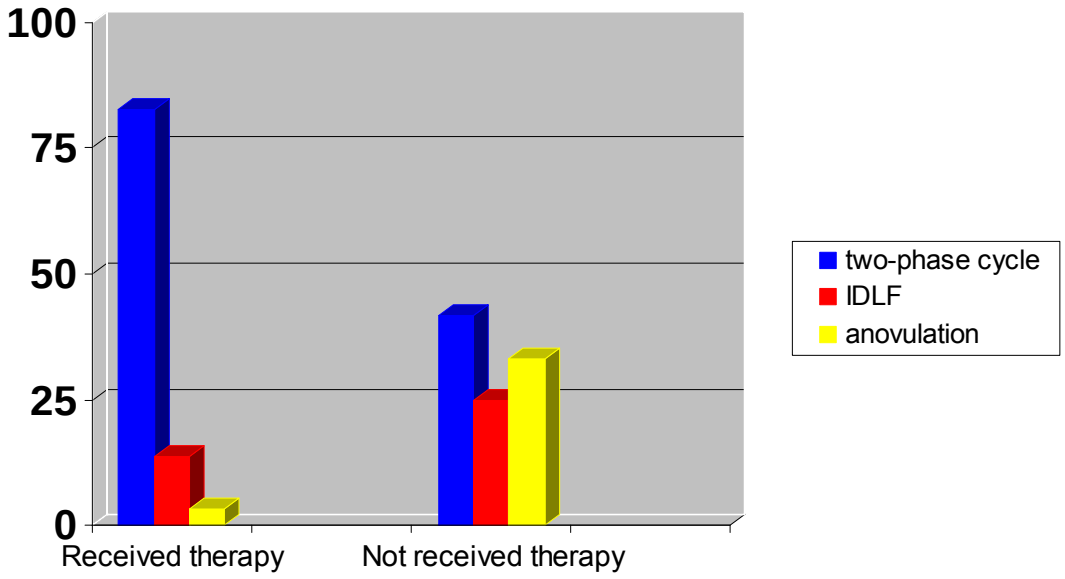


Fig. № 4. Characteristics of the menstrual cycle in women of reproductive age.

Thus, our analysis of basal body temperature charts of our surveyed patients showed that one of the main gynecological disorder identified in adolescent girls after artificial abortion is anovulation. Complex of rehabilitation measures reduces the likelihood of the formation of adolescent girls anovulation in 2,2 times.

In women after artificial interruption of the first pregnancy, major gynecological disorder is a detectable decrease in functional activity of the corpus luteum - IDLF and anovulation. Frequency of two-phase menstrual cycles after a proposed complex of rehabilitation treatment in women of reproductive age increases almost in 2 times, 2,4 times reduces development of IDLF syndrome, in 9,8 times reduces the frequency of anovulation formation.

Summary. Artificial termination of first pregnancy contributes to the formation

in adolescent girls:

• post-abortion endometritis in 33.3%;

• gynecological disorders by type of anovulatory menstrual cycles in 55,6%, IDLF syndrome in 11.1%;

among women of reproductive age:

• post-abortion endometritis in 20,8%;

• hyperprolactinemia - every third (37,5%);

• gynecological disorders by type of anovulatory menstrual cycles in 33,3%, IDLF syndrome in 25%;

Using the proposed set of preventive and treatment activities, including complex anti-inflammatory therapy; the use of low-dose OC on the first day of post-abortion contraceptive period by the scheme for at least 6 months; gut and the vagina microbiota correction, the wide use of physical therapy (a combination of low doses of an alternating magnetic field and sinusoidal modulated currents), facilitated by:

in adolescent girls:

• Lack of formation of inflammatory diseases of the uterus and appendages in postabortion period, while in the comparison group post-abortion endometritis was diagnosed in one out of three;

• reduce the likelihood of anovulation formation in 2,2 times;

among women of reproductive age:

• reduce the incidence of acute inflammatory diseases of the uterus and appendages in 2 times;

• reduction of 2,2 times the frequency of the formation of moderate hyperprolactinemia;

• reduce the formation of hormonal disorders according to the type IDLF syndrome in 1,8 times, anovulation - in 9,8 times.

Literature.

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