INTRODUCTION
Reproductive potential is the ability of the girls to give birth to healthy offspring when she gets to childbearing age. The level and quality of reproductive potential is determined by the combined effect of the complex medical and social factors that form the index of women’s health in the future readiness for sexual partnership and responsible motherhood. However, there is a worldwide trend of reduction of the number of healthy women in the general population [1–2]. There is an increase of gynecological diseases among adolescent girls such as inflammatory processes of pelvic organs, menstrual disorders, namely menorrhagia and dysmenorrhea, reaching almost 75% in the 15–18 age groups (according to epidemiological longitudinal study “Family and Children of Ukraine” [3]). The final formation of the reproductive system and physical health in adult women mostly depends on the comfortable and healthy duration of childhood and puberty. Therefore, the prevention of girls’ health disorders is certainly an important contribution to the reproductive, intellectual, economic, political reserve of society. This issue is particularly acute in recent years, when a wide depopulation on the background of deterioration in the quality characteristics of the population (in the first place – general health) indicates that Ukraine entered a period of long-term demographic crisis.

One of the important factors worsening reproductive health of young women today is the chronic duration of inflammatory processes in childhood.

ANALYSIS OF PUBLISHED DATA AND RESEARCH TASK
In the structure of gynecological diseases of childhood leading place belongs to inflammatory processes of the external genitalia and recurrent conductive adhesive processes of vulva. Relapse of vulvar adhesions in girls aged 2–8 years according to official statistics is up to 11.6–14%, but in real life the percentage of recurrence is much higher and get up to 40% in 3 of the month and 25% in 6 month after treatment, since not enough long-term observation of this group of patients is done [8].

The period of the girl childhood is characterized by low functional activity of the reproductive system: estradiol secretion is negligible, antral follicle maturation occur infrequently and irregularly, the secretion of gonadotropin-releasing hormone is impermanent; sub-systems receptor links are not developed, the secretion of neurotransmitters is poor. Age of 3–4 years is a period of natural decline of ovarian follicles at girls on 5–10%, which predisposes development of hypoestrogenism. Histological study of the follicles of girls of prepubescent period made by Y.M. Meyer in 1979 has found that in age of 2–4 years only a few follicles get to the maturing stage [5].

However, the widespread belief that the main etiological factor in the pathological process of the vulva is an adhesive hypoestrogenic state isn’t correct. According to studies conducted by a group of scientists, M.K. Caglar et al., estradiol levels in girls with and without adhesions of their presence was the same [3]. In one of the retrospective studies the successful use of estrogen ointment was reported only in 15% of cases [4].

The use of anti-inflammatory steroid agents such as cream Betamethasone 0.05% twice a day for 4–6 weeks has been succeeded in the treatment of recurrent adhesions in girls’ neutral periods in 68% of cases [5]. In addition, it is noted that recurrent adhesive process of the vulva in girls is accompanied by asymptomatic bacteriuria [6].

According to the Royal Melbourne Children’s Hospital (Royal Children's Hospital Melbourne), manual separation of adhesions accompanied by high psychic traumatization of girls and subsequent high risk of recurrence, and also the use of creams containing estrogen, accompanied by a high risk of recurrence [7].

Maturing of the reproductive system in the age of 3–6 years is determined by certain peculiarities of endocrine and immune systems, ensuring the formation of locus minoris in the lower genital tract. High frequency of adhesions in girls up to 8 years, not fully established the etiological factors in their development, as well as contradictory opinions about the diagnostic and therapeutic approaches to the management of girls with adhesive process of vulva determine the importance of this problem. Multicenter study of medical and social factors of recurrent adhesions showed that mothers of healthy girls possess a greater degree of knowledge about the menstrual function of the girls, the rules of personal hygiene and often implement them than mothers of girls with recurrent adhesions [8].

The aim of our research work was to research violation of the rules of intimate hygiene as one of the main factors leading to adhesive processes of the vulva, to find the true percentage of recur-
rence of vulva adhesions and develop the concept of the prevention of this disease.

**MATERIAL AND METHODS**

The total number of patients was 290 mothers from Central (Kyiv), Western (Lviv), East (Donetsk) regions of Ukraine and their 290 daughters. The criteria for the inclusion of the study were 290 girls aged 2 to 8 years with recurrent adhesions of the labia minora (2 or more). Moms have signed an informed consent form. All mothers participating in the study were given the opportunity to answer questions in private and girls were examined in an atmosphere of complete comfort. Girls with proven allergic to chamomile have been excluded from the study.

Group I include 145 girls with recurrent adhesions of the labia minora, mothers who were consulted on the rules of personal hygiene and healthy way of life and got recommendations to use for intimate hygiene saugella poligyn 1 time per day continuously for 6 months after a standard course of topical therapy.

II group include 145 girls with recurrent adhesions of the labia minora, whose mothers used any product in the usual mode.

All girls had local treatment that was conducted for 10 days after adhesion separation: baths in a solution of medical herbs 1 times a day in the evening, application of sea buckthorn ointment in the morning and laevomecolum in the evening on vulva.

We evaluate the effectiveness of the results of a complex approach of recurrent adhesions, which included counseling mothers about the rules on intimate hygiene and healthy way of life and the use of saugella poligyn ("Rottapharm", Italy) for the prevention of recurrent adhesions of the labia minora at children. Saugella poligyn is a liquid soap for personal hygiene containing chamomile essential oil with anti-allergic and anti-inflammatory action.

The health status in both groups of patients was evaluated in 1, 3 and 6 months after local treatment. The percentage of recurrence of adhesions and inflammatory processes of the external genitalia was determined. The data of urogenital smear test and bacteriological test of vaginal secretions are obtained. Also a survey mothers about their level of knowledge about the basics of personal hygiene was done.

**THE RESULTS OF THE STUDY AND DISCUSSION**

According to the survey of 290 mothers it was found that adhesions occurred at girls with chronic vulvitis in 40.37% of cases. The greatest percentage of recurrence occurred within 3 months in 37.5% of girls, 25% in 6 months and in a year in less than 8% of the girls. Only 40% of mothers believe that underwear should be changed when dirty and only 25% use a separate towel for the genital organs, but an individual washcloth and soap in 95%.

Most of women used their personal soap for girls. After defecation 80% of girls are used to pass hygienic washing away and only 60% of mothers change diapers every 2–3 hrs.

It was found that almost 82% of mothers believe that it is necessary to implement lessons for healthy lifestyle in secondary schools and ready to listen a lecture on the rules of personal girls hygiene.

Before treatment, in group 1 there were girls with following clinical and laboratory characteristics (Table):

- hyperemia of the mucous of the external genitalia in 88 (60.68%);
- 95 (65.51%) girls reported on persistent discomfort in the vulva;
- pathological discharge from vagina had 88 (60.68%) patients;
- Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia and/or association of bacteria in clinically insignificant titer was found at 35 (24.13%) girls and clinically significant titer at 34 (23.44%) girls;
- more than half of the girls had inflammatory smear test (60.68%).

Patients at group 2 had the following clinical and laboratory characteristics prior to treatment (Table):

- hyperemia of the mucous of the external genitalia in 86 (59.31%);
- 97 (66.89%) of the girls reported on the constant discomfort in the vulva;
- pathological discharge from vagina had 86 (59.31%) patients;
- Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia and/or association of bacteria in clinically insignificant titer was found at 37 (25.51%) girls and clinically significant titer at 35 (22.06%) girls;
- more than half of the girls had inflammatory smear test (59.31%).

Thus the initial changes in the clinical and laboratory parameters for girls in group 1 and 2 were the same. None of complications were observed during the 10 days course of local therapy in the studied group.

One month after the treatment of patients in the first group showed a significant decrease of clinical manifestations of the inflammatory process in time (Figure 1). It was found that recurrence of inflammatory process of vulva happened in 3 months after treatment in 12 girls (8.27%) and in 7 (4.82%) patients in 6 months.
As has been revealed that in both groups, the percentage of patients with constant discomfort in the vulva area is higher on of 10% than the percentage of girls with an inflammatory process that likely is evidence that at girls with recurrent adhesive process of vulva stable psychological discomfort in the vulva is formed.

There was a significant decrease in the number of patients with clinical signs of inflammation in group 2 in one month after the treatment (Figure 2). Hyperemia of the mucous of the external genitalia, abnormal leucorrhea and inflammatory type of smear was found at girls in 4 times less than before the treatment. Recurrence of the inflammatory process happened in 3

### TABLE. CLINICAL AND LABORATORY CHARACTERISTICS OF PATIENTS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Before treatment</th>
<th>In one month after treatment</th>
<th>In 3 month after treatment</th>
<th>In 6 month after treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I group</td>
<td>II group</td>
<td>I group</td>
<td>II group</td>
</tr>
<tr>
<td>Hyperemia of external genitalia</td>
<td>88 (60.68%)</td>
<td>86 (59.31%)</td>
<td>5 (3.44%)</td>
<td>26 (17.93%)</td>
</tr>
<tr>
<td>Instant feeling of discomfort of</td>
<td>95 (65.51%)</td>
<td>97 (66.89%)</td>
<td>5 (3.44%)</td>
<td>25 (17.24%)</td>
</tr>
<tr>
<td>external genitalia</td>
<td>88 (60.68%)</td>
<td>86 (59.31%)</td>
<td>4 (2.75%)</td>
<td>23 (15.86%)</td>
</tr>
<tr>
<td>Pathological vaginal discharge</td>
<td>88 (60.68%)</td>
<td>86 (59.31%)</td>
<td>4 (2.75%)</td>
<td>23 (15.86%)</td>
</tr>
<tr>
<td>Inflammatory smear test</td>
<td>88 (60.68%)</td>
<td>86 (59.31%)</td>
<td>4 (2.75%)</td>
<td>23 (15.86%)</td>
</tr>
<tr>
<td>The result of bacteriological test</td>
<td>Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia or association of bacteria less than $10^3$ in 35 (24.13%), more than $10^3$ in 34 (23.44%)</td>
<td>Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia or association of bacteria less than $10^3$ in 35 (24.13%), more than $10^3$ in 34 (23.44%)</td>
<td>Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia or association of bacteria less than $10^3$ in 35 (24.13%), more than $10^3$ in 34 (23.44%)</td>
<td>Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia or association of bacteria less than $10^3$ in 35 (24.13%), more than $10^3$ in 34 (23.44%)</td>
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</table>

![Figure 1. The changes of clinical and laboratory characteristics in patients of group 1 (%)](image-url)

As has been revealed that in both groups, the percentage of patients with constant discomfort in the vulva area is higher on of 10% than the percentage of girls with an inflammatory process that likely is evidence that at girls with recurrent adhesive process of vulva stable psychological discomfort in the vulva is formed.
months after treatment in 40.68% of cases and 32.41% after 6 months, exceeding the group 1 in several times (see Table). It was found that the incidence of recurrence of the vulva adhesive in the first group amounted to 3.44% in 3 months after treatment and 4.82% in 6 months. In the second group recurrence of adhesions occurred in 40.68% of patients in 3 months and in 6 months in 32.41% of cases (Figure 3).

**CONCLUSIONS**

1. The highest percentage of relapses occurred within 3 months after treatment – up to 41%.
2. Active counseling of mothers of girls by general practitioner, pediatrician and adolescent gynecologist about the rules of personal hygiene in the different periods of girls’ life could reduce the incidence of vulvar adhesions at girls of preschool age.
3. The great number of mothers need on information about healthy life style and intimate hygiene of girls was revealed in the study.
4. Recurrent labial adhesions may be reduced by compliance of the rules of intimate hygiene, and regular usage of optimal product of personal hygiene for example such as saugella poligyn (“Rottapharm”, Italy).
5. The follow up of girl after treatment should be prolonged for at least for 1 year with regular check-ups (1 time in 3 months) with constant supervision of compliance of the intimate hygiene recommendations.
RECURRENT ADHESIONS OF THE LABIA MINORA IN GIRLS: NEW SOLUTIONS

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Relapse of vulvar adhesions in girls aged 2–8 years according to official statistics is up to 11.6–14%, but in real life the percentage of recurrence is much higher and get up to 40% in 3 of the month and 25% in 6 month after treatment.

High frequency of adhesions in girls up to 8 years, not fully established the etiological factors in their development, as well as contradictory opinions about the diagnostic and therapeutic approaches to the management of girls with adhesive process of vulva determine the importance of this problem.

In the present study was evaluate the effectiveness of the complex treatment of recurrent adhesions of the labia minora at children, which included counseling mothers about the rules on intimate hygiene and regular usage of product for personal hygiene such as saugella poligyn. The great number of mothers need on information about healthy life style and intimate hygiene of their girls.

The follow up of girl after treatment should be prolonged for at least for 1 year with regular check-ups (1 time in 3 months) with constant supervision of compliance of the intimate hygiene recommendations.

Keywords: labial adhesions, recurrent adhesions, teenage girls, saugella poligyn.
РЕЦИДИВУЮЧІ СИНЕХІЇ СТАТЕВИХ ГУБ У ДІВЧАТОК: НОВЕ ВИРІШЕННЯ ПРОБЛЕМИ

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Результати дослідження показали, що частота рецидивів синехій статевих губ може бути зменшена шляхом дотримання правил ініціальної гінекології та регулярного використання засобів особистої гінекології після стандартного місцевого лікування. В другій групі рецидиви виявлено в 4,82% через 6 місяців.

Висока частота синехії статевих губ у дівчаток до 8 років, не повністю встановлені етіологічні фактори їхнього розвитку, а також суперечні діагностичні і терапевтичні підходи до тактики ведення таких пацієнтік визначають важливість даної проблеми.

У поданому дослідженні була вивчена ефективність комплексного лікування рецидивуючих синехій статевих губ у дівчаток, яке включало консультацію матерів щодо правил ініціальної гінекології та здорового способу життя та використання рідкого мило саугелла поліджин для профілактики рецидивів.

Було встановлено, що частота рецидивів синехій статевих губ у першій групі склала 3,44% через 3 місяці після лікування і 4,82% через 6 місяців. У другій групі рецидиви спостерігалися в 4,82% через 3 місяці та 3,44% через 6 місяців.

Висока частота синехій статевих губ у дівчаток до 8 років, не повністю встановлені етіологічні фактори їхнього розвитку, а також суперечні діагностичні і терапевтичні підходи до тактики ведення таких пацієнтік визначають важливість даної проблеми.

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Ключові слова: синехії, рецидивуючі синехії, дівчата-підлітки, саугелла поліджин.