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Pregnancy and prenatal outcomes of juvenile mothers of Yakutsk

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Introduction

The period from 10 to 20 years old (in some countries to 24 years old) was recommended by international experts to be considered as “teenage” in Geneva in 1987. Teenage pregnancy is said to occur when a women aged between eleven and nineteen period. Pregnancy at teenage period was and continues to be the problem of public health care [1].

There is now the common opinion in literature about prevalence complication pregnancy and its outcome in young age. The majority of scientists think that young mothers have more complication than old ones [1, 3, 4, 5, 6, 7]. But some authors notice that there are no statistical significant differences to perinatal complications between young mothers and old ones [8, 9, 10].

During last years in our country the growth of somatic and gynecological morbidity of teenage girls is being marked. Deceases, that took place in child and teenage do not pass without consequences and afterwards complicate pregnancy and childbirth, exert bad influence on the

newborn's health. The duration of pregnancy, the result of childbirth and the state of a newborn are depend on a girl's belonging to a certain age group. The younger is the girl – the more is the danger. Practically every 2-3 teenage mother has extra genital pathology that complicates the duration of pregnancy [4]. Premature childbirth more often happens among teenagers, than older women, also more often anemia and preeclampsia are take place [5].

The fact, that many of teenage mother physiologically and psychologically are not ready to bear a child is accompanied by high number of pregnancy and childbirth complications, birth of premature, sick and traumatized newborns [4]. . The newborns mortality is higher among teenage mothers [2].

Alcohol abusing, smoking ant taking drugs make sense on pregnancy and childbirth. Teenage mother more often have bad habits (every 2-3 teenage mother). Newborns, who's mothers were smoking during pregnancy period have lower weight than those of non-smoking mothers [2].

In that way, teenager girl's pregnancy for today continues to be important medical and social problem. Since nowadays the reproductive health of teenagers, features of course and childbirths in different regions of Russia was not studied well, in Yakutsk such studies didn't take place before.

The aim of the study to compare pregnancy outcomes of the teenagers and the control, and to estimate a health condition of children born by them in early neonatal period.

Patients and Methods

The research work was made on the base of 1 and 2 obstetric departments of Yakutsk city clinic hospital. Complex researches took place from 2006 to 2009. The basic group was formed from 894 teenager mothers (younger than 19 years old) and their newborns. The group under control was formed from 714 women of optimum child-bearing age (20-34 years old).

STATISTICA version 6.1 was used for statistical analysis. Student's t-test was used for continuous variables, Chi square, Fishers exact test was used for categorical variables. The significance level adopted was 0.05.

Results

According to 1 and 2 obstetric departments of Yakutsk city clinic hospital figures, the share of teenager mothers has made 4,8-5,4 % from the general number of all childbirths and there is no tendency for lowering. The age of basic group was within 12 to 18 years old inclusive, average $17,4 \pm 0,02$ age. The age of basic group was $25,7 \pm 0,1$.

From 894 studied women there are Yakut teenager mothers – 414 (46,3%), Russian – 400 (44,7%), Even – 13 (1,4%), Evenk – 13 (1,4%), others – 54 (6,2%).

In the basic group prevailed women with first pregnancy - 770 (86 %). At the same time there were cases of second and third-pregnancy - 124 (14 %). First childbirth women were – 841 (94%), repeated childbirth women – 53 (6%).

Among the control group 272 (38%) were women with first pregnancy, 442 (62%) with repeated pregnancy, 391 (55%) – first childbirth, 323 (45%) – repeated childbirth.

The results of research work show that 9 % girls no attended prenatal consultations. However, adolescents attended in prenatal consultations, every 7 adolescent had poor prenatal care.

Many teenage mothers have bad habits: the majority of them were smoking before pregnancy – 170 (19%), elder women were smoking in 70 (9,8%) of cases.

The results of research work show that the majority of studied women of different ages have any kind of chronic somatic pathology. The structure of somatic pathology of teenage mothers and elder mothers is of the same kind. On the first place in the basic group – increasing of thyroid gland 232 (26 %, $\chi^2= 21,5$ $p=0,00000$), on the second - chronic pyelonephritis 195 (22 %, $\chi^2= 0,4$, $p<0,5$), diseases of cardiovascular system take the third place - 111 (12,5%, $\chi^2= 27,3$, $p= 0,000001$).

In the control group on the first place there are also thyroid gland diseases – 252 (35,4%), on the second – cardiovascular diseases – 164 (33%), then comes chronic pyelonephritis- 226 (31,6%), myopia – 167 (23,3%). Teenage mothers more often have narrow pelvis –190 (19% vs. 5%). This was statistically significant ($\chi^2= 73,4$, $p=0,00000$).

The majority of studied women, independently of an age, during pregnancy have one or another kind of genital pathology. Among gynecologic diseases the big relative density was made with infectious inflammatory processes with primary localization in a vagina and cervical channel, the share of venereal diseases in the basic group is higher than in the control group. Frequency of laboratory confirmed ureaplasmosis in group of teenage pregnant women makes 144 (16,1 %), a chlamydiosis-109 (12 %) ,a mycoplasmosis 104 (11,6 %), in the control group 7,7%, 7,7% and 5,6 % accordingly, These differences were statistically significant ($p<0,000001$). In the basic group before or during pregnancy 11 peoples were down with syphilis, trichomoniasis - 11, trichomoniatic colpitis 13, sharp-ended condiloms 17, contact with tuberculosis – 10.

The most frequent complications during pregnancy were anemia's 376 (42 %) in the basic group, 443 (62%, $p<0,000001$) in the control group, pregnancy induced hypertension (21% vs. 15%, $p< 0,0005$), gestosis of medium and heavy degree more often have teenage mothers – 6,2%, in control group – 4%. Oedemas of pregnant women also often have teenagers – 61 (7% vs. 1.8%). This was statistically significant ($\chi^2= 17,2$, $p=0,00003$).

Premature pouring out of waters happened in 22% in the basic group and 30% ($p < 0,0001$) in the control group, prolonged waterless period – 5% and 2% ($p < 0,0005$).

Teenagers more often need instrumental swinging of covers 183 (20%), against 7,8%. This was statistically significant ($\chi^2 = 53,7$, $p = 0,00000$). They more often have lack of waters – 84 (9,3%) in the control group – 5% ($\chi^2 = 10,8$, $p = 0,0009$). Anomalies of birth activity have women of different ages with same frequency, but weakness of birth activity meets in 7,5% of teenage mothers, against 3,6% ($\chi^2 = 11,1$, $p = 0,0008$). Childbirth of the majority of teenagers and elder women happens through natural birth ways. 92 (10%) teenagers had caesarean section as compared with 117 (16,3%) in the control ($\chi^2 = 11,2$, $p = 0,003$). Exfoliation of the placenta more often happened among teenagers 15 (1,6%), against 6 (0,8%).

The prematurity rate (gestational age of less than 37 weeks) was 6,6% in teenagers compared with 2% in the control. This was statistically significant ($\chi^2 = 45,5$, $p = 0,00000$).

Teenagers more often need episiotomy 8% ($p < 0,000001$), against 2%, but, in spite of this, 15% of teenage mothers have rupture of perineum, vagina and cervix of the uterus ($p < 0,000001$).

In the basic group were born 894 children, 486 boys (54,3%), 408 girls (45%). Birth weight of the children ranged from 840g to 4810g, average $3296 \pm 18,5$, in the control group ranged from 1300 to 5020, average $3529 \pm 18,4$ g. The teenagers had 7,2% of low birth weight babies (birth weight $< 2,5$ kg) compared with 1,6% in the control ($\chi^2 = 27,2$, $p = 0,00000$). There were 59 preterm (< 37 weeks of gestation) and 7 post mature deliveries (≥ 42 weeks). Birth asphyxia (Apgar score < 7) amongst the babies born to teenagers was 8,1% compared with 5,1% in the control. The difference was statistically significant ($\chi^2 = 6,1$, $p = 0,01$) [table 2].

Small for gestational age at a birth 8 % of children among young mothers. Morph functional immaturity has 9,2% of teenage mothers newborns, against 1,4 % ($p < 0,000001$). Any symptoms of prenatal defeats of central nerve system have 10% of newborns in the control group, in the basic group – 5,3%. On the second stage of nursing 7,6 % and 6,8% of children of the basic and the control groups are transported to the Perinatal Center of National Center of Medicine. This was not statistically significant ($p = 0,5$) (tabl. 1).

8 newborns have died in early neonatal period, this makes 8,94 %. In structure of the direct reasons of death on the first place is lung pathology (3 children), on the second – congenital pneumonia (2), on the third – congenital anomalies (2) and asphyxia (1). 13 teenage mothers refused from their children.

Conclusions

Carried out researches have shown, that complications of pregnancy and childbirth of young mothers in Yakutsk exceed pathological conditions of newborns of elder women. Among somatic diseases on the first place are thyroid gland diseases, on the second is chronic pyelonephritis, on the third are cardio-vascular diseases. Among gynecologic pathologies diseases, passed by sexual ways prevail. Ureaplasmosis in the group of teenage pregnant women makes 16,1%, chlamidiosis - 12%, mycoplasmosis 11,6%, in the control group 7,7%, 7,7% and 5,6% accordingly. Among pregnancy complications in the group of teenage mother's pregnancy induced hypertension develops more often (21%). Weakness of birth activity meets in 7,5% of teenage mothers, against 3,6% in the control group. The babies of teenagers had more low-birth-weight, preterm deliveries, morph functional immaturity, birth asphyxia and were statistically significant.

It is necessary to propagandize actively healthy way of life among rising generation, to work on prevention of unwanted pregnancy among teenagers, lead sanitary-educational work about family planning, optimize methods of clinic observing of teenage pregnant women in consulting centers, lead first prophylactic work together with teachers, psychologists, pediatricists and gynecologists.

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Table 1. Clinical characteristic of the infants

Outcome measures	Teenagers (%) n=894	Control (%) N=714	χ^2	P value
Birth asphyxia	73 (8,1%)	37 (5,1%)	6,1	0,01
Small for gestational age	77 (8,6%)	41 (5,7%)	4,8	0,02
Preterm Deliveries (Gestational Age <37 weeks)	59 (6,6%)	14 (2%)	45,5	<0,000001
Jaundice	46 (5,1%)	18 (2,5%)	7,1	0,007
Congenital anomaly	22 (2,4%)	30 (4,2%)	3,8	0,04
Respiratory distress syndrome	18 (1,9%)	5 (0,3%),	4,8	0,02
Morph functional immaturity	83 (9,2%)	10 (1,4%)	45,2	< 0,000001
Admission into SCBU	72 (8%)	52 (7,2%)	0,33	0,5

SCBU: special care baby unit