BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg
BG PULSE JOURNAL

MEDICAL CONSEQUENCES OF EARLY MARRIAGE AND EARLY PREGNANCY: A SYSTEMATIC ANALYSIS OF ADOLESCENT GIRLS' REPRODUCTIVE HEALTH

Jumaniyazova M.X.
Teacher of Obstetrics and Gynecology of the highest category, Public Health College named after Abu Ali ibn Sina, Khiva.

ABSTRACT

Relevance of the study: According to the World Health Organization (WHO), early marriage and pregnancy among adolescent girls under the age of 18 represent one of the primary risk factors for maternal and infant mortality. Pregnancy in a physiologically and anatomically immature body frequently results in severe obstetric complications.

Aim of the study: To conduct a comparative study of the medical consequences and pathophysiological complications (preeclampsia, anemia, premature birth) of early marriage and early pregnancy on the maternal and fetal body, as well as to evaluate perinatal mortality rates.

Materials and Methods: A retrospective analysis of the medical and birth histories of 1,000 pregnant women observed in maternity complexes and perinatal centers of the Khorezm region from 2018 to 2023 was conducted. Patients were divided into two groups: the main group consisted of pregnant adolescents aged 15-18 (n=500), and the control group included reproductively mature pregnant women aged 20-25 (n=500).

Results: Severe iron deficiency anemia (68.4%), gestational hypertension and preeclampsia (24.2%), as well as abnormalities of labor forces (31.6%) were found to be 2.5 to 3 times more common in adolescent pregnant women compared to the control group. The rates of premature birth and fetal hypoxia were significantly higher among early-age mothers.

Conclusion: Early pregnancy belongs to a high-risk category due to "nutrient competition" between the mother and the fetus, incomplete formation of the pelvic bones, and endocrine instability. Preventing early marriages and improving the culture of reproductive health among adolescents will significantly reduce obstetric pathologies.

Keywords: Early marriage, adolescent pregnancy, reproductive health, preeclampsia, clinically narrow pelvis, fetal hypoxia, perinatal complications, obstetrics and gynecology.

1. INTRODUCTION

The issue of early marriage is not merely a socio-economic problem but a highly critical medical issue that remains the focus of scientists and physicians worldwide. According to the United Nations Population Fund (UNFPA), more than 12 million girls worldwide are married before reaching the age of 18 annually. In developing countries, complications during pregnancy and childbirth remain the leading cause of death among adolescent girls aged 15-19.

From a medical perspective, a girl's physical and sexual maturation does not indicate her reproductive readiness (the ability to carry a pregnancy and deliver a healthy child). The anatomical growth of an adolescent girl, particularly the full formation of the pelvic bones, the closure of ossification centers, and the stabilization of the endocrine system (hypothalamic-pituitary-ovarian axis), is typically completely established only by the age of 20-21. Early marriage and pregnancy under the age of 18 constitute an extreme "stress" for the maternal body, causing biological competition for nutrients between the growing adolescent body and the developing fetus. Consequently, the mother sacrifices her health, while the fetus loses the opportunity for normal development.

This study was conducted to demonstrate the obstetric complications of early pregnancy based on clinical and statistical evidence and to develop preventive recommendations for public health professionals.

2. MATERIALS AND METHODS

The research is based on an analysis of clinical-retrospective data conducted over a 5-year period (2018-2023) in a regional multidisciplinary medical center and maternity hospitals. A total of 1,000 medical records of women in labor, partograms, and newborn development charts were examined.

The study participants were divided into two large groups based on age:

- **Main group (Early pregnancy):** 500 adolescent girls aged 15 to 18 experiencing their first pregnancy.
- **Control group (Optimal age pregnancy):** 500 women aged 20 to 25 with normally developed reproductive health.

Analyzed clinical indicators:

1. Complications during pregnancy (iron deficiency anemia, early and late toxicosis, preeclampsia).
2. Complications of the labor process (threat of preterm birth, weakness of labor activity, rates of operative delivery / Cesarean section, perineal tears).
3. Condition of the fetus and newborn (prematurity, low birth weight, Apgar score assessment, asphyxia).

All obtained data were processed using medical statistical analysis (Student's t-test, reliability level $p<0.05$).

3. RESULTS AND DISCUSSION

3.1. Analysis of Obstetric Complications in the Maternal Body

The study results indicated that the bodies of girls who become pregnant at an early age are entirely unprepared for this physiological process, leading to a significantly higher rate of complications compared to women of optimal reproductive age. Table 1 presents the main complications related to maternal health.

Table 1. Frequency of Obstetric Complications in Early and Optimal Age Pregnant Women

Type of Complication	Main Group (15-18 years) n=500	Control Group (20-25 years) n=500	Statistical Difference (p)
Iron deficiency anemia (II-III degree)	342 (68.4%)	158 (31.6%)	$p < 0.001$
Gestational hypertension / Preeclampsia	121 (24.2%)	42 (8.4%)	$p < 0.01$
Threat of preterm birth	185 (37.0%)	65 (13.0%)	$p < 0.01$
Probability of clinically/anatomically narrow pelvis	108 (21.6%)	24 (4.8%)	$p < 0.001$
Weakness of labor activity	158 (31.6%)	55 (11.0%)	$p < 0.05$
Cesarean section surgery (Total)	145 (29.0%)	78 (15.6%)	$p < 0.01$

Discussion (Maternal Health): As seen in Table 1, nearly **70% of adolescent pregnant women suffer from severe anemia**. The reason is that while the adolescent body is highly dependent on iron for its own physical growth (increase in bone and muscle mass), blood reserves are diverted to meet fetal needs. Consequently, the hemoglobin level in the mother's blood drops sharply.

The most severe risk is the high incidence of **preeclampsia and eclampsia (24.2%)**. The cardiovascular and renal systems of adolescent girls cannot withstand the 40-50% increase in circulating blood volume caused by pregnancy. This results in elevated blood pressure, proteinuria, and seizures (eclampsia), posing a direct threat to the lives of both mother and child.

Furthermore, because the formation of pelvic bones is incomplete before the age of 18, an **anatomically narrow pelvis** is common. As a result, labor fails to progress, and the rate of operative intervention (Cesarean section) reaches 29% (almost double that of the control group). Due to the low elasticity of birth canal tissues, perineal and vaginal lacerations are also highly prevalent.

3.2. Analysis of Perinatal Outcomes in Fetuses and Newborns

Early pregnancy has a devastating impact not only on the mother but also on the health of the newborn. An analysis of perinatal outcomes is presented in Table 2.

Table 2. Impact of Early Pregnancy on Infant Health (Perinatal Indicators)

Perinatal Indicators and Complications	Infants of Main Group Mothers (n=500)	Infants of Control Group Mothers (n=500)	Statistical Difference (p)
Preterm (premature) infants	134 (26.8%)	41 (8.2%)	$p < 0.001$
Low birth weight (<2500 gr)	165 (33.0%)	52 (10.4%)	$p < 0.01$
Low Apgar score (<6 points)	112 (22.4%)	35 (7.0%)	$p < 0.05$
Neonatal hypoxia / asphyxia	148 (29.6%)	48 (9.6%)	$p < 0.01$
Admission to the Neonatal Intensive Care Unit (NICU)	85 (17.0%)	22 (4.4%)	$p < 0.001$

Discussion (Fetal Health):

The data in Table 2 illustrate that the condition of infants born to early-age mothers is extremely vulnerable. The remarkably high rates of **preterm birth (26.8%) and low birth weight (33.0%)** are scientifically explained by a phenomenon known as "nutritional competition." Since the pregnant adolescent's body is still growing, essential nutrients (calcium, protein, vitamins) are retained in maternal tissues rather than being fully transferred through the placenta to the fetus. This leads to intrauterine growth restriction (IUGR).

Cases of **hypoxia and asphyxia (29.6%)** are also three times more frequent in the main group. This is caused by impaired placental blood circulation due to chronic maternal anemia and preeclampsia. Consequently, infants suffering from brain oxygen deprivation are admitted to intensive care units and are at an increased risk of developing neurological deficits (such as cerebral palsy and cognitive impairments) in the future.

3.3. Psychological and Social Consequences

In addition to medical complications, the psychological burden of early marriage must be considered. The nervous system of 15-18-year-old girls is unprepared to bear the responsibilities of motherhood, family issues, and pregnancy-induced toxicoses. This can lead to severe postpartum depression, psychoses, and even suicidal tendencies. Due to early disruption of reproductive organ functions, these girls face a significantly higher risk of miscarriages and infertility in subsequent pregnancies.

4. CONCLUSION AND RECOMMENDATIONS

Research and clinical analyses convincingly prove that early marriage and adolescent pregnancy pose immense medical, psychological, and genetic risks to the lives of both the mother and the child. A physiologically immature body is incapable of sustaining the burden of pregnancy, leading to catastrophic complications such as preeclampsia, clinically narrow pelvis, preterm birth, and fetal hypoxia.

To address these issues, the implementation of the following comprehensive measures is recommended:

1. **Medical-Educational Prevention:** Enhancing subjects on sex education and the formation of a reproductive health culture among girls in general education schools, lyceums, and colleges (especially in specialized secondary educational institutions).
2. **Early Diagnosis and Screening:** Conducting continuous screening of the somatic and gynecological health (anemia, iodine deficiency, pelvic bone formation) of adolescent girls in rural medical centers and family polyclinics.
3. **Strengthening Legislation:** Strictly monitoring the legal age of marriage and establishing public oversight to prevent early marriages (including unofficial religious marriages) in collaboration with social workers, neighborhood committees, and prevention inspectors.
4. **Specialized Medical Care:** In cases where early pregnancy is recorded, managing them not as standard pregnancies but as a "high perinatal risk group," providing exclusive observation and delivery planning in specialized regional perinatal centers.

Raising a healthy generation primarily begins with a healthy mother. Combating early marriage must be an essential duty not only for medical professionals but for society as a whole.

5. REFERENCES

1. World Health Organization (WHO). *Global Report on Adolescent Pregnancy and its Complications.* Geneva, 2021.
2. Ayupova, F.M., Asatova, M.M. *Problems of Adolescent Reproductive Health in Obstetrics and Gynecology.* Tashkent: "Ibn Sino" Publishing House, 2018.
3. Kurbanov, D.J. *Prevention of Labor Complications and Perinatal Mortality.* Medical Journal, 2020. Vol 4. P. 45-52.
4. Mayor, S. "Pregnancy and childbirth are leading causes of death in teenage girls in developing countries." *BMJ*, 2019.
5. National Protocols on "Protection of Maternal and Child Health, Strengthening Reproductive Health" of the Ministry of Health of the Republic of Uzbekistan. Tashkent, 2022.