

THE STATE OF THE ANTIOXIDANT DEFENSE SYSTEM IN PREGNANT WOMEN WITH LATE GESTOSIS COMBINED WITH IRON DEFICIENCY ANEMIA

Babayeva A.H. (Republic of Azerbaijan) Email: Babayeva339@scientifictext.ru

*Babayeva Arzu Hanraqim kizi – Assistant,
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY,
AZERBAIJAN STATE INSTITUTE FOR ADVANCED TRAINING OF DOCTORS NAMED AFTER A. ALIYEV,
BAKU, REPUBLIC OF AZERBAIJAN*

Abstract: *had the study involved 90 pregnant women with late gestosis of pregnant women, burdened with iron deficiency anemia. Gestosis of moderate severity in combination with IDA of severe degree was observed in 18 (20%) pregnant women, in combination with IDA of moderate severity in 27(33%), against the background of IDA of mild degree – in 45 (50%) examined. The severity of gestosis was evaluated on THE goek scale taking into account the duration of gestosis, the severity of background diseases, as well as the degree of functional disorders of fetoplacental blood flow according to dopplerometry. In serum blood was tested, the level of antioxidant vitamins C and E.*

It was found that women suffering from gestosis in combination with IDA, there was a significant activation of lipid peroxidation processes. The total antioxidant activity was reduced to $81.4 \pm 1.03\%$. The content of vitamin C in serum was 0.34 ± 0.002 mg%, vitamin E – 1.23 ± 0.2 mg/100ml.

It was concluded that gestosis and anemia burden each other. Their pathogenesis has a lot in common-both pathologies activate lipid peroxidation processes and decrease blood antioxidant activity.

Keywords: *gestosis, iron deficiency anemia, lipid peroxidation, vitamins C and E.*

СОСТОЯНИЕ СИСТЕМЫ АНТИОКСИДАНТНОЙ ЗАЩИТЫ ОРГАНИЗМА У БЕРЕМЕННЫХ С ПОЗДНИМ ГЕСТОЗОМ В СОЧЕТАНИИ С ЖЕЛЕЗОДЕФИЦИТНОЙ АНЕМИЕЙ

Бабаева А.Х. (Азербайджанская Республика)

*Бабаева Арзу Ханрагим кызы – ассистент,
кафедра акушерства и гинекологии,
Азербайджанский государственный институт усовершенствования врачей им. А. Алиева,
г. Баку, Азербайджанская Республика*

Аннотация: *было обследовано 90 беременных женщин с поздними гестозами беременных, отягощенными железodefицитной анемией. Гестоз средней тяжести в сочетании с ЖДА тяжелой степени наблюдался у 18 (20%) беременных, в сочетании с ЖДА средней степени у 27(33%), на фоне ЖДА легкой степени – у 45 (50%) обследованных. Степень тяжести гестоза оценивалась по шкале ГОЕК с учетом длительности гестоза, тяжести фоновых заболеваний, а также степени функциональных нарушений фетоплацентарного кровотока по данным доплерометрии. В сыворотке крови проверялся уровень антиоксидантных витаминов С и Е.*

Было выявлено, что у женщин, страдающих гестозом в сочетании с ЖДА, наблюдалась значительная активация процессов перекисного окисления липидов. Суммарная антиоксидантная активность была снижена и составляла $81,4 \pm 1,03\%$. Содержание витамина С в сыворотке крови составило $0,34 \pm 0,002$ мг%, витамина Е – $1,23 \pm 0,2$ мг/100 мл.

Были сделаны выводы, что гестоз и анемия взаимно отягощают друг друга. В их патогенезе много общего – при обеих патологиях активизируются процессы перекисного окисления липидов и снижается антиоксидантная активность крови.

Ключевые слова: *гестоз, железodefицитная анемия, перекисное окисление липидов, витамины С и Е.*

The Central part of the pathogenesis of many pathological processes, including obstetric, is the disorder of redox processes, resulting in impaired supply of tissues with oxygen [1,2]. In this regard, more complete ideas about the metabolism of oxygen deficiency States are important [3].

Of particular concern is the high percentage of pregnant women with vitamin deficiencies, including antioxidant series – C (83.3% of normal), E (65.4% of normal), and (90% of the required amount) – which are one of the most important components of the antioxidant protection of the body [4, 5].

The aim of the study was to study lipid peroxidation processes and the state of the body's antioxidant defense system in pregnant women with late gestosis in combination with iron deficiency anemia.

Methods. To accomplish this goal was the study involved 90 pregnant women with gestosis and iron-deficiency anemia. The control group included 30 pregnant women with physiological course of pregnancy. The

average age of pregnant women was 29.2 ± 1.2 years. All surveyed women belonged to a group with a low social standard of living. Gestosis of moderate severity in combination with IDA of severe degree was observed in 18 (20%) pregnant women, in combination with IDA of moderate severity in 27(33%), against the background of IDA of mild degree – in 45 (50%) examined. The severity of gestosis was evaluated on THE goek scale taking into account the duration of gestosis, the severity of background diseases, as well as the degree of functional disorders of fetoplacental blood flow according to dopplerometry. The severity of the anaemia was assessed according to who classification (1993).

Results. In women suffering from gestosis in combination with IDA, there was a significant activation of lipid peroxidation processes. The total antioxidant activity was reduced to $81.4 \pm 1.03\%$. The content of vitamin C in serum was 0.34 ± 0.002 mg%, vitamin E – 1.23 ± 0.2 mg/100ml. Vitamin E by mechanism of action refers to the "traps" of free radicals, or true antioxidants that destroy free radicals and cut off the growth of chains. The antioxidant effect of vitamin C is manifested by the reduction of oxidized alpha-tocopherol and a decrease in the formation of free radicals. The content of ascorbic acid in biological fluids is sharply reduced in conditions characterized by activation of lipid peroxidation and an increase in free iron ions.

In the study of blood in patients with gestosis and IDA activation of free radical oxidation processes was revealed. Therefore, an indicator of the effectiveness of the therapy was a decrease in lipid peroxidation products, an increase in the content of vitamin C and E, which have antiradical activity.

The obtained data indicate the stabilization of the antioxidant system and antioxidant protection of pregnant women with gestosis in combination with IDA.

The normalizing effect of vitamin E, a, C on the antioxidant defense system is due to the universality of the points of application of the action of antioxidants, i.e. cell membranes, as well as freely circulating immune cells.

Conclusions. Gestosis and anemia burden the course of gestation and significantly worsen its outcome, both for the mother and for the fetus. The pathogenesis of gestosis and anemia has a lot in common, in particular, there is activation of lipid peroxidation and a decrease in antioxidant activity of blood serum.

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