

The Influence of Enoant on the Level of “Medium Sized Molecules” and Circulating Immune Complexes in Women Using Oral Hormonal Contraception

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Abstract

Influence enoant, as way of medical rehabilitation at a stage of planning of pregnancy on a level of average molecules (SM) and circulating immune complexes (CIC) at 27 women who used oral hormonal contraceptives earlier has been investigated. Inclusion enoant in rehabilitation actions promotes proof normalization of a level of SM and the Central Electoral Committee that testifies to disappearance of a syndrome of a metabolic intoxication and immunotoxicosis, and in clinical aspect to achievement of proof remission of disease that creates favorable conditions for the subsequent pregnancy.

Keywords: Oral Hormonal Contraceptives; The Average Molecules; Circulating Immune Complexes; Enoant

Introduction

Clinical experience proves that in a number of women of reproductive age who use oral hormonal contraception (OHC) chronic hepato-biliary system diseases mainly in the form of fatty hepatosis, chronic nonspecific reactive hepatitis, chronic toxic hepatitis, chronic noncalculous cholecystitis (CNC) and others develop. Interaction between drugs and the liver can be categorized as the effects of liver diseases on drug metabolism, drug-induced liver damage, and hepatic drug metabolism. The number of possible interactions is enormous [1-5]. The appearance of clinical and laboratory signs of liver and biliary system affection is the reason to quit using this method of contraception which may be undesirable in case the contraceptives are used as medication. On the other hand chronic hepato-biliary diseases in the women of reproductive age are undesirable for future pregnancy [6]. That is why we consider that women who use OHC require medical rehabilitation with preparations which can normalize metabolic processes, the state of immune system and liver parenchyma. With this aim we decided to use enoant for the first time in gynaecological practice.

Enoant is a food concentrate of grapes polyphenols, with all the range of flavonoids and nonflavonoids and such microelements as copper, zinc, iron, etc. Due to these its complex biological action such as antibacterial, antiviral, P-vitamin and antioxidative is provided. Earlier we observed the positive influence of enoant on the clinical course of early gestosis and some biochemical indices in pregnant with concomitant somatic pathology [7,8]. This is the first time we use the preparation in women who used to take OHC and plan to get pregnant at the moment.

Aim of the Study

The aim of this work was to study the influence of enoant used as the means of medical rehabilitation before the planned pregnancy on the level of “medium sized molecules” (MSM) and circulating immune complexes (CIC) in women who used oral hormonal contraception (OHC).

Materials and Methods

We kept under observation 54 women aged 17 to 36 who used to take oral hormonal contraceptives (mainly “Regulon”, “Zhannin”, “Logest”, “Triregol”, “Regividon”) and planned pregnancy at the time of observation. Term of preparations use was from 6 months to 1,5 years; 13 women had a break in taking OHC because of either pregnancy and lactation period or due to some other reasons. The data of clinical, biochemical and instrumental investigation revealed hepatosteatosi in 16 patients, chronic noncalculous cholecystitis in remission phase in 21 patients and biliary dyskinesia - in 17.

All of the tested women were administered repeated courses of enterosorbition (with enterosgel or silard P in the average therapeutic doses) and polyvitamins as the means of rehabilitation and prevention of hepato-biliary pathology aggravation. Along with this 27 women (the main group) additionally received 25 ml of enoant solution 3 times a day with a glass of water or juice for 15-20 days. The rest of 27 patients didn't receive this preparation. The main group and the group of comparison correlated in age, and initial state of hepato-biliary system.

Along with general clinical and laboratory examination MSM level [9] and the level of CIC in blood serum were defined by the method of precipitation in polyethylene glycol solution with molecular weight of 6000 Dalton [10]; molecular composition of CIC (high- (>19S), medium- (11S-19S) and low molecular (<11S) complexes) was studied according to their differentiated precipitation in 2,0%, 3,5% and 6% polyethylene glycol solutions [10]. The statistical analyses of the obtained data was performed on PC Celeron 300A with the use of special programs designed for medical data processing.

Results and Discussion

The carried out investigation revealed that patients who used OHC and had as the complication hepato-biliary system pathology showed biochemical indices changes. 42 women had elevated MSM in blood serum with $1,26 \pm 0,34$ gr/l on average at the beginning of medical rehabilitation (with the norm of $0,52 \pm 0,04$ gr/l; $P < 0,01$). In the rest of the patients this biochemical index though elevated didn't differ validly from the norm (it was on the average level of $0,62 \pm 0,09$ gr/l; $P > 0,05$). Individual analyses revealed that more essential growth of MSM was registered in those patients who had lasting hepato-biliary system pathology. In such cases the index was $2,53 \pm 0,73$ gr/l ($P < 0,01$). As it was shown earlier the growth of MSM level in blood serum is an evidence of “metabolic” (endogenic) intoxication [11], which may aggravate other metabolic processes and immune status, which requires obligatory correction, especially when the pregnancy is planned.

Along with this the tested patients who kept using OHC as the means of contraception also had elevated CIC level in blood (on average it was 2,2 times elevated in comparison to the norm of $1,88 \pm 0,15$ gr/l). In the majority of cases this was accompanied by disbalance in their different molecular composition with the increasing of more pathogenic (toxicogenic) fractions - medium- (11S-19S) and low molecular (<11S) immune complexes. The total amount of these complexes in women with hepato-biliary system pathology was on average $78,2 \pm 3,3\%$ (with the norm of $56,6 \pm 2,2\%$; $P < 0,01$). This was an evidence of immune toxic syndrome, which was clinically manifested in asthenia symptoms. Individual analyses showed that the growing disbalance in their different molecular composition correlated with MSM in blood. The index of linear correlation (r) was equal to +0,622.

Medical rehabilitation with enoant in women who use OHC at the moment but plan get pregnant later on causes more essential positive changes in laboratory analyses in comparison to the group which didn't use this preparation. It was pointed out that women

from the main group with vivid asthenia symptoms on the background of hepato-biliary system pathology concomitant to OHC use had a shorter period of general weakness symptoms ($16,2 \pm 3,3$ days shorter; $P < 0,05$) and fatigue symptoms ($16,5 \pm 0,9$ days shorter; $P < 0,05$); a quicker normalization of sleep and appetite ($12,2 \pm 0,3$ and $12,9 \pm 0,5$ days shorter correspondingly; $P < 0,05$). In the main group patients the duration of the symptom “heaviness in the right sub-costal area” was 2,2 times shorter; sclera sub-ictericity was 1,8 times shorter (in case this symptom was present initially) and 2,4 times shorter was the duration of dyspeptic symptoms period (nausea, vomiting, unstable defecation).

Along with these it was pointed out that all the patients from the main group by the end of the first week of rehabilitation had valid decrease of MSM level in blood (up to $0,56 \pm 0,04$ gr/l; $P < 0,01$) with its complete normalization in 10 - 15 days. Reanalysis revealed that in all the patients of the main group the index kept normal not only during the time of rehabilitation but one year after. At the same time in the group of comparison by the end of traditional rehabilitation the MSM level was only in 8 women and in half a year - only in 4. All the rest women of this group regardless of relatively satisfactory general state and absence of dyspeptic symptoms had high SMS level ($0,72 \pm 0,05$ gr/l; $P < 0,05$). The later proved the presence of metabolic intoxication syndrome.

The same dynamics was characteristic to CIC and their fractional composition. On the 15th day of rehabilitation in the main group common CIC concentration was $2,2 \pm 0,34$ gr/l ($P < 0,01$ in comparison to the initial level). At the same time the majority of comparison group patients only had a slight tendency to its decreasing ($3,02 \pm 0,23$ gr/l; $P > 0,05$). Besides while the group of comparison had a certain disbalance of immune fractions even by the end of rehabilitation period the main group even by the end of the second week of enoant intake showed valid decrease of common CIC due to medium and low molecule fractions (their sum was $53,2 \pm 1,8\%$ while in the group of comparison the index was $68,3 \pm 2,2\%$; $P < 0,05$). The reanalysis showed that CIC level and the content of its most pathogenic fractions was normal ($1,92 \pm 0,04$ gr/l; $35,5 \pm 1,5\%$ for medium- and $21,4 \pm 2,5\%$ for low-molecular fractions). Later during a year regular medical check-up only 2 women of the main group had disbalance in CIC fractions while in the group of comparison there were two times more. All of them had the tendency either of growing of MSM or staying on the same pathology level. Clinically we registered the aggravation of chronic hepato-biliary system diseases which required treatment.

In case of pregnancy we observed it more favourable course in women who were rehabilitated with the use of enoant. In all of them during the period of gestation CIC and MSM levels were kept normal with no early or late gestosis. Because of all these we may conclude that the use of enoant in medical rehabilitation of women who used to take OHC before planned pregnancy is reasonable and pathogenically grounded.

Conclusion:

1. Women who used to take oral hormonal contraceptives and have chronic hepato-biliary system diseases show the increased level of CIC and MSM, mainly because of low and medium sized immune fractions which states the presence of immune toxic syndrome and endogenic metabolic intoxication.
2. Traditional medical rehabilitation of such patients not always leads to complete elimination of the above mentioned disturbances, which is not favourable for the future pregnancy.
3. Using of enoant in medical rehabilitation of women who used to take oral hormonal contraceptives and plan pregnancy leads to stable normalization of MSM and CIC level, which proves the elimination of metabolic intoxication and immune toxicosis and clinical picture - to stable remission which is favourable for gestation.

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