ISSN 2181-3187

УДК:575.224.22:616.33-002.2 -085

TREATMENT OF CHRONIC GASTRITIS IN CARRIERS OF VARIOUS GENOTYPES

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Resume: The MDR1 gene promotes binding of the cell to the drug, its entry into the cell, and /or efflux into the intercellular space, which explains the development of resistance of the cell to drugs during the expression of this gene. Therefore, the MDR1 gene plays an important role in the effectiveness of pharmacotherapy of various diseases, including HCG. The MDR-1 gene encodes the protein P-glycoprotein (translated from the English "permeability" means "permeability"), which is located in the membrane of many normal cells of organs and tissues of the body and regulates the processes of active absorption of drugs through the membrane into the cell. The expression of this protein determines the pharmacokinetics of drugs and, at one time, the effectiveness of pharmacotherapy.

Key words: cytochrome P450, gene polymorphism, MDR-1 gene, CYP2C19 gene, chronic gastritis, personification of pharmacotherapy.

Introduction. A number of studies are being conducted worldwide on the use of pharmacogenetic methods, especially on the role of genes in the early detection, correct diagnosis and treatment without complications of chronic gastritis. Most scientists dealing with chronic gastritis agree that the acid-peptic factor occupies a central place in the inflammatory processes of the stomach, that chronic gastritis is a local infectious process, the causative agent of which is considered to be N.pylori, the effectiveness of eradication therapy of which is directly related to the genotypic affiliation of the patient [1,5,9,16,21]. The development and formation of a new paradigm challenges modern medicine to develop effective ways to eradicate N.pylori, as well as to study ways to effectively and safely approach this problem. In this regard, the study of the significance of genes that regulate the effectiveness, including the safety of the drug used, is a priority and an urgent problem of medicine [2,6,10,18].

Genes, as in all spheres of the body's vital activity, remain the determining factor in the course of the process [11,13,15,19]. In the same way, in the pharmacotherapy of specific nosological units, the pharmacodynamics and pharmacokinetics of each drug are dictated by the polymorphism of specific genes[3,4,7,20]. In this regard, the tactics of treating pathological changes in such processes of the body should be carried out taking into account the genetics of each patient and it is necessary to recognize the

ISSN 2181-3187

presence of genes that carry out an individual pharmacological response of the body to the action of drugs [8,12,14].

The aim of the study is to analyze the types and clinical manifestations of chronic gastritis by genotypic variants of polymorphisms C3435T, G2677T and C1236T of the gene (MDR-1) of the glycoprotein P xenobiotic transporter, as well as pharmacoepidemiological assessment of the treatment process.

Materials and methods of research. The age of patients with chronic gastritis ranged from 18 to 63 years. At the same time, it should be noted that women predominated among patients with chronic gastritis.

The initial stage of our work was the selection and optimization of the oligoprimer system for the detection of polymorphism rs1045642 of the MDR-1 gene by polymorphic marker C3435T and polymorphism rs4244285 of the SUR2C19 gene by polymorphic marker G681A, i.e. improvements in the methodological method for detecting these genetic markers. The nucleotide sequences for detecting polymorphism rs1045642 of the MDR-1 gene and polymorphism rs4244285 of the SUR2C19 gene were selected using the Oligo v.6.31 program (Molecular Biology Insights Inc., USA) and synthesized at Syntol LLC and NPFLitech".

Results of the study It is known that the polymorphism C3435T of the MDR1 gene has the genotypes C/C, T/T and C/T. After pharmacotherapy, the following treatment results were noted depending on the genotype: in patients with the C/C genotype, recovery, without improvement, deterioration and complications were noted in the same amounts and were 15% each, but improvement was noted in about 39% of patients with a similar genotype[6,2].

It turned out that in patients with the T/T genotype, pharmacotherapy ended in recovery and improvement in 31 and 49% of cases, but in 21% of patients, treatment was without improvement, nevertheless, in patients with a similar genotype, no deterioration or complications were noted.

Patients with the C/T genotype accounted for the main number of patients and recovery occurred in about 40% of cases, but patients with and without improvement after pharmacotherapy accounted for the same number – about 29%; 9% of patients had deterioration and 2% of patients suffered from complications.

In addition, polymorphisms G2677T, C1236T of the MDR1 gene were studied. The G2677T polymorphism has the genotypes G/G, TT and G/T. The results of the treatment were evaluated according to the same criteria. Thus, in patients with G/G genotypic affiliation, recovery occurred in about 39% of patients, while improvements were noted in 33% of cases, 22% of patients had no improvement, deterioration was detected in about 6% of patients, but no complications were detected.

In patients with the T/T genotype, treatment had a high effect and recovery was noted in 31% of patients, the condition of 37.5% of patients also improved, but without

ISSN 2181-3187

improvement or even deterioration were in 25% and 6% of patients, respectively, no complications were noted.

Heterozygous genotype G/T was detected more than other genotypes of the studied polymorphism and pharmacotherapy ended in recovery in about 38% of patients, improvement was found in 24% of patients, about 18% of patients had no improvement, while deterioration was noted in 13% of cases and complications were observed in 6.66% of patients.

The polymorphism C1236T of the MDR1 gene has the genotypes C/C, T/Thousand/T. Like previous polymorphisms, the genotypes of this polymorphic variant of the studied gene were distributed according to criteria for evaluating the results of pharmacotherapy. So, if pharmacotherapy showed good results in patients with the C/C genotype and 35% of patients recovered from the disease and 29% of patients improved, then 17% of patients did not improve, and 11% had deterioration and about 6% of patients had complications.

Patients with the T/T genotype recovered in 45.5% of cases and their condition improved in 27%, but 18% of patients had no improvement and deterioration was observed in 9% of patients, but there were no complications.

Patients with the genotypic affiliation of S/T made up a huge part of the studied and the results according to the criteria for evaluating pharmacotherapy were as follows: recovery occurred in about 33% of patients, improvement after treatment was in about 29% of patients, but 21% of patients turned out to be without improvement, while deterioration and complications were detected in 13 and about 4% patients, respectively.

It should be noted that the results of this study are of great importance for the selection of personal dosage regimens for drug pharmacotherapy, which are based on the genotyping of patients. This approach will contribute to improving the effectiveness and safety of HCG pharmacotherapy.

Conclusions. Thus, the research results show that in order to obtain a complete pharmacotherapeutic effect, the doctor needs to have information about the patient's genotype. Such patient data helps the doctor optimize the chosen treatment plan and, most importantly, select the dose and treat the patient effectively and safely.

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