

UDC 61:577.1

N. V. Besruchko, V. G. Vasilkov, N. Y. Kelina, D. V. Osinkin, G. K. Rubtsov

PROGRAM OF CLINICAL-LABORATORY MONITORING BIOCHEMICAL MARKERS OF ESTIMATION FROM ENDOGEN INTOXIKATION DURING CHRONICLE AND ACUTE CHOLECYSTITIS

Program of clinical-laboratory monitoring of endogen intoxication by patients of chronicle and acute cholecystitis must had to include biochemical markers: components of middle molecules mass, active of catalase, ceruloplasmin, level of malondialdehyde. Clinical-biochemical estimation of utilize of criterion in the discover frontier alteration with deviation of the norm of analysis parameters is considered. Discover of markers tests of endogen intoxication for patients of cholecystitis may be basis of complex clinical-biochemical research in early postsurgery period, for utilize doctor in the construction of program correction of metabolism violations.

Key word: *endogen intoxication, clinical-laboratory monitoring, biochemical markers, chronicle and acute cholecystitis.*

Working out of criteria information for biochemical parameters of degree endotoxicoze at a chronic and sharp cholecystitis remains an actual problem of kliniko-laboratory monitoring [1–5]. Application of the criterion reflecting set of contributions of separate parameters in infringement of metabolic processes in an organism of the patient can serve one of ways of the decision of this problem, allowing to raise information and to reveal the importance of studied laboratory tests in expressiveness forecasting endogen to an intoxications in the early postoperative period [6].

The work purpose is to offer the program of kliniko-laboratory monitoring of biochemical markers of an estimation endogen to an intoxication at a chronic and sharp cholecystitis.

Material and research methods. For revealing of biochemical markers of an estimation endogen intoxications and formations of the program of their kliniko-laboratory monitoring retrospective research of case records 71 persons at the age from 24 years till 65 years operated laparoskopiche concerning a cholecystitis, with a favorable outcome of disease (City clinical hospital of the first help of G. A. Zaharina of Penza) is conducted. In this group of the surveyed two subgroups have been allocated: 48 sick of a chronic cholecystitis and 23 sick of a sharp cholecystitis. Supervision was performed at stages before operation, 1, 3, 5 days of the postoperative period.

Patients a chronic and sharp cholecystitis after planned laparoskopiche operations are joined in analyzed groups. Patients with tumoral diseases of bodies of an abdominal cavity were excluded; patients with abdominal a pathology are complicated by bleedings in the early postoperative period.

As control the given inspections almost healthy 29 people without clinical displays of any diseases (out-patient inspection) at the age from 20 till 43 years served.

The basic biochemical indicators were studied during research, parameters of a pool of molecules of average weight [7], activity of a catalase [8], ceruloplasmin [9], level malondialdehyde (MDA) [10] served.

Settlement indices of an intoxication, including leukocytes intoxication indexes (LII) on the Kalf-Kaliph, Ostrovsky and Himich and an index of nuclear shift [9, 11] and the criterion reflecting set of contributions of separate parameters in infringement of metabolic processes in an organism at patients [7] were applied. The statistical analysis of the received results is spent with use of variation statistics for small sample with application of t-criterion of Stjudenta with use of the computer program "Excel".

Results of research and their discussion. Dynamics of investigated parameters before operation at a chronic cholecystitis had the following character: activity of a catalase in erythrocytes has been lowered, in comparison with control group, in 2.9 times. After operation activity of a catalase in erythrocytes increased, in comparison with values of these indicators before operation, in 1.3 times ($p < 0.05$). At sick of a sharp cholecystitis of a tendency of changes of activity of a catalase in erythrocytes were similar.

For 1 days after operation are revealed mercers expressiveness indicators endotoxicoze at a sharp cholecystitis, in relation to a chronic cholecystitis, $p < 0.05$: LII on Himich – above in 1.8 times; activity ceruloplasmin – above in 1.3 times; factor K1 showing distribution of substances of low and average molecular weight between squirrels of plasma of blood and glycoliks erythrocytes, – above in 2.2 times. For 3 and 5 days of supervision level MDA in blood was more low in 1.2 times at sick of a sharp cholecystitis, in comparison with chronic.

LII on Himich for 3 and 5 days of the postoperative period remained higher at a sharp cholecystitis, in comparison with a chronic cholecystitis, in 1.4 and 1.7 times accordingly ($p < 0.05$). It can serve as acknowledgement larger to expressiveness of kliniko-biochemical displays endogen to an intoxication at sick of a sharp cholecystitis, in comparison with a chronic cholecystitis.

In our previous researches [2, 3, 12] it has been shown that changes of biochemical indicators at sick

of a sharp cholecystitis, in relation to dynamics of corresponding biochemical tests at sick of a chronic cholecystitis, are characterized by boundary changes of ranges of criterion J in the early postoperative period – for 1, 3 and 5 days after operation.

As the basic components of the program of kliniko-laboratory monitoring of biochemical markers of an estimation endogen intoxications at a chronic and sharp cholecystitis can be offered following blocks.

1. Revealing of dynamics of parameters of molecules of average weight, activity of a catalase, ceruloplasmin, level malondialdehyde in an estimation endogen intoxications at patients a chronic and sharp cholecystitis in the course of surgical treatment.

2. An establishment of prospective correlation dependences a complex of studied kliniko-biochemical indicators, for a substantiation of expediency of their complex application in clinical practice.

3. Revealing of ranges of criterion J reflecting set of contributions of separate parameters in infringement of metabolic processes in an organism, in dynamics of supervision of patients a chronic and sharp cholecystitis, for their use in clinical practice.

4. Working out and a substantiation of criteria informations for the indicators of molecules of average weight, activity of a catalase, ceruloplasmin, level malondialdehyde in an estimation endogen intoxications at sick of a cholecystitis in the early postoperative period.

Earlier we had been developed the equations of multiple-factor regress [2, 3, 12] in which as a dependent variable level of molecules of average weight – one of the conventional markers endotoxikose has been chosen. As independent variables studied kliniko-biochemical indicators served. At a chronic cholecystitis level of molecules of average weight most significantly in dynamics of supervision has been interconnected with concentration malondialdehyde. At sick of a sharp cholecystitis the most expressed regresses of

size of molecules of average weight have shown with activity ceruloplasmin. It can serve as acknowledgment of necessity of use in the program of kliniko-laboratory monitoring endogen to an intoxication at such biochemical markers sick of a cholecystitis endogen to an intoxication, as parameters of molecules of average weight, activity of a catalase, ceruloplasmin, level malondialdehyde.

As criteria informations biochemical markers of an endotoxikose at a cholecystitis contributions of separate blocks of kliniko-biochemical indicators to total criterion J as sum their deviations from norm that allows to interpret in a complex revealed infringements of metabolic processes in an organism of the patient in dynamics of supervision, including in the early postoperative period can be used. According to the data received in researches [12] spent by us, at a cholecystitis more than 90 % of the contribution to total criterion J bring its values on the block of biochemical parameters (including indicators of is free-radical oxidation and antioxidant protection, level of molecules of average weight).

The conclusion. Thus, in the program of kliniko-laboratory monitoring endogen intoxications at sick of a cholecystitis should be considered that in the early postoperative period the disbalance in work oxidant and antioxidant the systems which expressiveness is more at a sharp cholecystitis, than at a chronic cholecystitis is observed. Revealing markers tests endogen intoxications of an organism sick of a cholecystitis can form base of carrying out of complex kliniko-biochemical research in the early postoperative period, for use by their clinical physicians in construction of the program of correction of the revealed metabolic infringements and if necessary – carrying out corresponding dezintoxications actions. Offered making programs of kliniko-laboratory monitoring of biochemical markers of an estimation endogen intoxications will be coordinated with results of the previous researches [11].

References

1. Vasilkov V. G., Safronov A. I., Osinkin D. V., Atanov Yu. A. Kliniko-instrumental monitoring of a condition of patients at laparoskopiche-skih cholecistectomie // Materials of XI International conference and Debatable Scientific Club "New Information Technology in Medicine, Biology, Pharmacology and Ecology". Gurzuf, 2003. P. 402–404.
2. Kelina N. Yu., Vasilkov V. G., Bezruchko N. V., Osinkin D. V. Kliniko-biochemical aspects of monitoring antioxidant and oxidant the status of blood at patients with is bilious-stone illness // Materials of XI International Conference and Debatable Scientific Club "New Information Technology in Medicine, Biology, Pharmacology and Ecology". Gurzuf, 2003. P. 406–408.
3. Bezruchko N. V., Kelina N. Yu., Vasilkov V. G., Shikunova L. G. To a question on demonstrative studying endotoxikose at urgent abdominal pathologies // The Bulletin of Intensive Therapy. 2008. № 5. P. 120–122.
4. Artemkin E. N. Diagnostics and Treatment Early Biliary Complications After Various Kinds Cholecistectomie: Avtoref. diss. ... cand. medical sciences. M., 2010. 27 p.
5. Budarev V. N. Influence of an Operational Trauma at Cholecistectomie on a Current of the Early Postoperative Period: Avtoref. diss. ... cand. medical sciences. Ryazan, 2010. 26 p.
6. Bezruchko N. V., Kelina N. Yu., Vasilkov V. G. Method for Cornflowers of an Estimation Endogen Intoxications at Urgent Abdominal Pathologies in the Early Postoperative Period: the patent for the invention № 2331882, a priority from 30.11.06, is registered 20.08.08.

7. Zhadenov I. I., Karjakina E. V., Belova S. V., Gorjachev V. I. A way of Definition Endogen Intoxications. The positive decision on delivery of the patent from 17.01.02, № gos. registration 2001111609, a priority from 26.04.01.
8. Galaktionova L. P., Molchanov A. V., Elchaninova S. A., Warsaw B. Ja. Sostojanie perekisy of oxidations at sick of stomach ulcer of a stomach and a duodenal gut // Clinical laboratory Diagnostics. 1998. № 6. P. 10–14.
9. A Directory on Laboratory Methods of Research / Under the editorship of L. A. Danilovoj. SPb.: Peter, 2003. 736 p.
10. Stalnaja I. D., Garmishvili T. G. Modern Methods in Biology. M.: Medicine, 1977. P. 66–68.
11. Medical Laboratory Technologies and Diagnostics. The Directory / Under edition of professor A. I. Karpishchenko. St.-Petersburg: Intermedica, 2002. Vol. 1. 408 p., Vol. 2. 600 p.
12. Bezruchko N. V. Criteri of Expressiveness Endotoxicoze at Urgent Abdominal Pathologies: Avtoref. diss. ... doct. biol. sciences. M., 2009. 45 p.
13. Kelina N. J., Bezruchko N. V., Rubtsov G. K., Chichkin S. N. Estimation vozdejstvija chemical environmental contamination as risk factor for health the person (state-of-the-art review) // Tomsk State Pedagogical University Bulletin. 2010. Issue 3. P. 156–161.

Bezruchko N. V.

Penza State Technologic Academy.

Proezd Baydukova / Ul. Gagarina, 1 a / 11, Penza, Russia, 440605.

E-mail: bnv1976@rambler.ru

Vasilkov V. G.

Penza Institute of Improvement of Doctors of Federal Agency on Public Health Services and Social Development.

Ul. Stasova, 8 a, Penza, Russia, 440060.

E-mail: giuv@sura.ru

Kelina N. Y.

Penza State Technologic Academy.

Proezd Baydukova / Ul. Gagarina, 1 a / 11, Penza, Russia, 440605.

E-mail: nukelina@yandex.ru

Osinkin D. V.

Penza Institute of Improvement of Doctors of Federal Agency on Public Health Services and Social Development.

Ul. Stasova, 8 a, Penza, Russia, 440060.

E-mail: giuv@sura.ru

Rubtsov G. K.

Penza State Technologic Academy.

Proezd Baydukova / Ul. Gagarina, 1 a / 11, Penza, Russia, 440605.

E-mail: rubczoff.georgij@yandex.ru

Received 03.05.2011.

Н. В. Безручко, В. Г. Васильков, Н. Ю. Келина, Д. В. Осинькин, Г. К. Рубцов

ПРОГРАММА КЛИНИКО-ЛАБОРАТОРНОГО МОНИТОРИНГА БИОХИМИЧЕСКИХ МАРКЕРОВ ОЦЕНКИ ЭНДОГЕННОЙ ИНТОКСИКАЦИИ ПРИ ХРОНИЧЕСКОМ И ОСТРОМ ХОЛЕЦИСТИТЕ

Программа клинико-лабораторного мониторинга эндогенной интоксикации у больных холециститом должна включать в себя такие биохимические маркеры, как параметры молекул средней массы, активность каталазы, церулоплазмينا, уровень малонового диальдегида. Для клинико-биохимической оценки выявленных отклонений от нормы может применяться анализ совокупности вкладов отдельных параметров в нарушение метаболических процессов в организме. Выявление маркерных тестов эндогенной интоксикации организма больных холециститом может послужить базой проведения комплексного клинико-биохимического исследования в раннем послеоперационном периоде, для использования их клиницистами в построении программы коррекции метаболических нарушений.

Ключевые слова: *эндогенная интоксикация, клинико-лабораторный мониторинг, биохимические маркеры, хронический и острый холецистит.*

Безручко Н. В., доктор биологических наук, профессор кафедры.

Пензенская государственная технологическая академия.

Проезд Байдукова / ул. Гагарина, 1 а / 11, Пенза, Россия, 440605.

E-mail: bnv1976@rambler.ru

Васильков В. Г., доктор медицинских наук, профессор, зав. кафедрой.
**Пензенский институт усовершенствования врачей
Федерального агентства по здравоохранению и социальному развитию.**
Ул. Стасова, 8 а, Пенза, Россия, 440060.
E-mail: giuv@sura.ru

Келина Н. Ю., доктор биологических наук, зав. кафедрой.
Пензенская государственная технологическая академия.
Проезд Байдукова / ул. Гагарина, 1 а / 11, Пенза, Россия, 440605.
E-mail: nukelina@yandex.ru

Осинькин Д. В., ассистент.
**Пензенский институт усовершенствования врачей
Федерального агентства по здравоохранению и социальному развитию.**
Ул. Стасова, 8 а, Пенза, Россия, 440060.
E-mail: giuv@sura.ru

Рубцов Г. К., ст. преподаватель.
Пензенская государственная технологическая академия.
Проезд Байдукова / ул. Гагарина, 1 а / 11, Пенза, Россия, 440605.
E-mail: bnv1976@rambler.ru