Retrospective analysis of the diagnostic reliability and effectiveness of electropuncture vegetative resonance test M.Yu. Gotovsky (Center for intelligent medical systems "IMEDIS", Moscow)

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SUMMARY

The article provides an analysis of publications in which, from the standpoint of evidencebased medicine, the diagnostic efficiency of the electropunctural diagnostic method, the autonomic resonance test, was assessed. The results of the analysis showed that, depending on the type of disease, the sensitivity of the autonomic resonance test ranged from 87.0 to 100%, specificity - from 86.4 to 93.96%, accuracy - from 69.92 to 91.2% if the results of the examinations were consistent with the clinical diagnosis - 91.4%.

Key words: electropuncture diagnostics, evidence-based medicine, vegetative resonance test, diagnostic efficiency and reliability.

RESUME

The article provides an analysis of publications in which from the standpoint of evidence-based medicine the diagnostic efficacy of electropunctural method vegetative resonance test is evaluated. The results show that, depending on the type of disease, the sensitivity of the vegetative resonance test is in range from 87.0 to 100%, the specificity - from 86.4 to 93.96%, accuracy - from 69.92 to 91.2% while correspondence with results of clinical diagnosis is 91.4%.

Keywords: electropunctural diagnostics, evidence-based medicine, vegetative resonance test, diagnostic efficacy and reliability.

Introduction

In his daily activities, a practical doctor, when making a diagnosis, must use generally accepted criteria and methods, which include clinical, morphological and functional research methods, consultations of specialized specialists, as well as rely on his own experience and use information from various sources of scientific medical information. In the process of making a diagnostic decision, most specialists prefer to use the most objective and scientifically reliable information material. The choice and critical understanding of sources of reliable information becomes critical at all stages and levels of medical care, and especially when making the correct diagnosis.

In recent years, medical diagnostics has been significantly enriched by a large number of new methods that are being actively introduced into healthcare practice. However, not all relatively new diagnostic methods that are used in the treatment of patients are characterized by a sufficient degree of reliability and effectiveness. In order to assess the effectiveness of the diagnostic methods used, a large number of criteria have been developed, and many of them seem to be possible to apply in all medical areas [1-3].

The diagnostic effectiveness of a specific medical method (screening test) is its ability to identify a disease and characterize the state of the body. Evaluation of diagnostic efficacy is carried out by comparing the diagnosis obtained using the evaluated method (screening test) with the reference (reference) diagnosis, which is based and obtained using proven clinical methods.

The reliability of a method (screening test) is a complex indicator, which includes several criteria, namely: sensitivity, specificity, predictive value

positive and negative results, accuracy. Each of the indicators is the result of an analysis of the statistical processing of clinical trials.

Sensitivity is the ability of a diagnostic method (screening test) to determine the presence of a disease (or condition).

Specificity characterizes the ability of a diagnostic method (screening test) to correctly exclude the presence of a disease (or condition).

The positive predictive value is the probability that a person who tests positive by a diagnostic method (screening test) actually has the disorder (true positive). A negative predictive value is the probability that a person with a negative diagnostic test (screening test) does not have the disease (true negative).

The accuracy of a diagnostic method (screening test) is the percentage of correct diagnoses (true positive results and true negative results) in the total number of diagnoses or the sum of true positive and true negative results of a diagnostic method (test) divided by the total number of results. With the help of evidence-based medicine methods and with the correct use of the criteria for the evidence of the results, it is possible to analyze any diagnostic method (screening test) used in modern medical practice, including those related to traditional medicine.

In recent years, in medical practice, along with other methods of electropunctural diagnostics, the method of electropunctural autonomic resonance test (ART) has been widely used, which is considered as one of the areas of comprehensive assessment of human health [4]. The currently available publications in peer-reviewed scientific medical journals make it possible to analyze the diagnostic effectiveness and reliability of the ART method, using such indicators as sensitivity, specificity and accuracy, which was the purpose of this study.

Materials and methods

The sources of analytical information were publications in peer-reviewed scientific medical journals, which were searched in the eLIBRARY, Medline, EMBASE databases and a specialized database of publications devoted to diagnostics issues MEDION. Abstracts and texts of articles for the period from 1991 to 2014 were selected. In the final version, 355 articles and 629 abstracts were analyzed, of which 10 publications in peer-reviewed scientific journals were selected. The main selection principle was such basic criteria of evidence-based medicine as diagnostic efficacy and reliability in the assessment by the ART method, which were most fully used in the studies reflected in these articles. In the process of compiling an analytical review, the recommendations reflected in specialized journals and publications were used [5, 6].

Results and discussion

All publications that were selected for the analysis of the diagnostic effectiveness and reliability of the ART method are shown in table. one.

Table 1

The results of the diagnostic efficiency and reliability of the use of the electropunctural vegetative resonance test for various diseases and functional disorders

Заболевание	Достоверность			Соответствие	Лите-
	Чувствительность	Специфичность	Точность	результатов	ратура
Функциональные расстройства на начальной стадии патологического процесса и на стадии морфологи- ческих изменений, проявляяющих- ся в форме клинического заболе- вания	-	_		91,4	[7]
Внутренний эндометриоз тела матки	93,5	87,3-89,6 %	90,1-91,2 %	<i>=</i> .	[8, 9]
Генитальный эндометриоз, «малые формы»	88,2	86,4 %	87,2 %	÷9	[10]
Генитальный эндометриоз	90,1	88,7 %	89,3 %	-	[11, 12]
Синдром поликистозных яичников	90,5	85,7 %	88,1 %		[13]
Угрожающие преждевременные роды	87,0	89,5 %	-	-	[14]
Гельминтно-протозойные инвазии у детей	100 (аскаридоз)	93,96 % (аска- ридоз), 93,2 % (энтеробиоз)	69,92 % (лям- блиоз), 88,88 % (энтеробиоз)	₹.	[15, 16]

In the most complete study, the assessment of the diagnostic information content of the ART method was carried out based on the results of a survey of 70 people: 43 men and 27 women of different age groups, the total number of measurements was 1677 [7]. Diagnostics was carried out using generally accepted methods, and at the time of ART measurements, a clinical diagnosis was established in all patients. According to the test results, the coincidence with the data of anamnesis and clinical studies was observed in 1534 measurements, true positive test results were noted in 979 measurements, false positive test results - in 96 measurements, false negative test results - in 47 dimensions and, finally, truly negative test results - in 555 dimensions. In this way,

Evaluation of the diagnostic effectiveness of the ART method in detecting internal endometriosis of the uterine body was carried out on the basis of examination of 113 women aged 28 to 54 years with masses of the uterine body [8, 9]. The diagnosis of internal endometriosis of the uterine body using the ART method (true positive results) was made in 43 of 46 patients with a clinical diagnosis of adenomyosis. True negative results were found in 60 of 67 patients in whom, as a result of surgery, adenomyosis was not detected. False negative results were obtained in 3, and false positive - in 7 patients. Thus, the diagnostic significance of the study is: sensitivity - 93.5%, specificity - 87.3–89.6%, overall accuracy - 90.1–91.2%, diagnostic significance of negative results -94.1%, diagnostic significance of positive results - 86.0%. The ART method was used to examine 39 women aged 20 to 36 years suffering from various forms (primary and secondary) infertility of unknown origin. The conclusion about the presence of "minor forms" of genital endometriosis was given when the conclusion after intraoperative intervention coincided with the results of morphological examination after biopsy. The results showed that the ART diagnosis of "minor forms" was established in 15 out of 17 patients with a clinical diagnosis of endometriosis, i.e. false negative results were obtained in 2 subjects. Thus, the diagnostic reliability of the ART examination is as follows: sensitivity - 88.2%, specificity - 86.4% and overall accuracy - 87,

A randomized and controlled examination of women with various diseases of the genital tract (215 patients from 16 to 54 years old, of which 147 were of reproductive age) was carried out using the ART method to detect genital endometriosis [11, 12]. According to the results of the examination, an electropunctural diagnosis was made, which was verified at the end with the clinical diagnosis, which was established as a result of the detection of endometrioid foci during the operation and after the pathological conclusion. The diagnosis of "genital endometriosis" by the ART method was established in 82 of 91, and the conclusion "no endometriosis" - in 110 of 124 patients. Based

examination results, the diagnostic reliability of the ART method is: sensitivity - 90.1%, specificity - 88.7%, accuracy - 89.3%, diagnostic significance of negative results - 92.4%, diagnostic significance of positive results - 85.4%. An examination by the ART method was carried out in 43 women aged 19 to 36 years, suffering from various forms (primary and secondary) infertility, for the detection of polycystic ovary syndrome, and based on the results of the examination, the clinical diagnosis was verified. Polycystic ovary syndrome was detected by ART in 19 of 21 patients, with false negative results in two patients. Thus, the ART method in the diagnosis of polycystic ovary syndrome is characterized by a sensitivity of 90.5%, a specificity of 85.7% and an accuracy of 88.1% [13].

ation with the help of ART was attended by 243 women aged 16 to 42 years, of whom 138 were with the threat of premature birth and 105 with a normal pregnancy. The diagnostic reliability of the method was determined [14]. The results of ART diagnostics were compared with the clinical diagnosis, which was established on the basis of anamnesis, gynecological status, ultrasound data, dopplerometry, etc. It was shown that the sensitivity was 87.0%, specificity - 89.5% diagnostic significance of negative results - 83.9%, diagnostic significance of positive results - 89.5%, overall accuracy - 88.1%. The results of a diagnostic examination using the ART method of 540 children aged 2 months to 17 years for the detection of helminth-protozoal diseases were compared with other standard tests, such as PCR, coproscopy, scraping for enterobiasis [15, 16]. Comparative diagnostic indicators for the detection of giardiasis, ascariasis and enterobiasis in children by the ART method revealed the following. Detection of lamblia: sensitivity - 51.06%, specificity - 80.23%, predictive value of a negative result - 75%, predictive value of a positive result - 58.53%, accuracy - 69.92%. Ascaris detection: sensitivity - 100%, specificity -93.96%, predictive value of a negative result - 100%, predictive value of a positive result - 12.5%, accuracy - 94%. Pinworm detection: sensitivity - 57.14%, specificity - 92.2%, predictive value of a negative result - 94%, predictive value of a positive result 53%, accuracy - 88,88%, scraping for enterobiasis [15, 16]. Comparative diagnostic indicators for the detection of giardiasis, ascariasis and enterobiasis in children by the ART method revealed the following. Detection of lamblia: sensitivity - 51.06% specificity - 80.23%, predictive value of a negative result - 75%, predictive value of a positive result - 58.53%, accuracy - 69.92%. Ascaris detection: sensitivity - 100%, specificity - 93.96%, predictive value of a negative result - 100%, predictive value of a positive result - 12.5%, accuracy - 94%. Pinworm detection: sensitivity - 57.14%, specificity - 92.2%, predictive value of a negative result - 94%, predictive value of a positive result - 53%, accuracy - 88.88%, scraping for enterobiasis [15, 16], Comparative diagnostic indicators for the detection of giardiasis, ascariasis and enterobiasis in children by the ART method revealed the following. Detection of lamblia: sensitivity - 51.06%, specificity - 80.23%, predictive value of a negative result - 75% predictive value of a positive result - 58.53%, accuracy - 69.92%. Ascaris detection: sensitivity - 100%, specificity - 93.96%, predictive value of a negative result - 100%, predictive value of a positive result - 12.5%, accuracy - 94%. Pinworm detection sensitivity - 57.14%, specificity - 92.2%, predictive value of a negative result - 94%, predictive value of a positive result - 53%, accuracy - 88.88%. Comparative diagnostic indicators for the detection of giardiasis, ascariasis and enterobiasis in children by the ART method revealed the following. Detection of lamblia: sensitivity - 51.06%, specificity - 80.23%, predictive value of a negative result - 75%, predictive value of a positive result - 58.53%, accuracy - 69.92%. Accaris detection: sensitivity - 100%, specificity - 93,96%, predictive value of a neoative result - 100%, predictive value of a positive result - 12.5%, accuracy - 94%, Pinworm detection; sensitivity - 57,14%, specificity - 92,2%, predictive value of a neoative result - 94%, predictive value of a positive result - 53%, accuracy - 88.88%. Comparative diagnostic indicators for the detection of giardiasis, ascariasis and enterobiasis in children by the ART method revealed the following. Detection of lamblia: sensitivity - 51.06%, specificity - 80.23% predictive value of a neoative result - 75%, predictive value of a positive result - 58,53%, accuracy - 69,92%, Ascaris detection; sensitivity - 100%, specificity - 93,96%, predictive value of a neoative result - 100%, predictive value of a positive result - 12,5% accuracy - 94%. Pinworm detection: sensitivity - 57.14%. specificity - 92.2%. predictive value of a neoative result - 94%. predictive value of a positive result - 53%. accuracy - 88.88%. Detection of lamblia: sensitivity - 51.06%. specificity - 80.23%. predictive value of a negative result - 75%, predictive value of a positive result - 58.53%, accuracy - 69.92%, Ascaris detection: sensitivity - 100%, specificity - 93.96%, predictive value of a negative result - 100%, predictive value of a positive result - 12.5%, accuracy - 94%. Pinworm detection: sensitivity - 1

conclusions

A retrospective study and analysis of the diagnostic effectiveness and reliability of the ART method was performed based on the results of publications presented in peer-reviewed scientific medical journals. There is every reason to believe that the ART method can be recommended for use as an express method for screening examination of patients, as well as for differential diagnosis in clinically difficult cases, along with other examination methods, and can be performed repeatedly. In particular, this should be considered important for the health of pregnant women and women of reproductive age.

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Gotovsky, M.Yu. Retrospective analysis of the diagnostic reliability and efficiency of the electropunctural vegetative resonance test / M.Yu. Gotovsky // Traditional medicine. - 2014. - No. 3 (38). - P.4-8.

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