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**USE OF THE META-ANALYSIS METHOD FOR THE**

**SELECTION OF TREATMENT FOR A SPECIFIC PATIENT**

In accordance with the concept of evidence-based medicine, the results of only those clinical studies conducted on the basis of the principles of clinical epidemiology, which allow to minimize both systematic and random errors, are recognized as scientifically valid. Quite often, the results of studies evaluating the effectiveness of the same therapeutic or preventive intervention or diagnostic method for the same disease differ. In this regard, there is a need for a relative assessment of the results of different studies and the integration of their results in order to obtain a general conclusion. One of the most popular and rapidly developing methods of system integration of the results of individual scientific studies today is the meta-analysis method. From the point of view of evidence-based medicine, meta-analysis of a large number of well-planned clinical studies with a low level of errors refers to the I class of recommendations for choosing the treatment of a specific patient. Undoubted advantages of meta-analysis include the possibility of increasing the statistical power of the study, and, consequently, the accuracy of the assessment of the effect of the analyzed intervention. This makes it possible to determine the categories of patients for which the obtained results are applicable more precisely than when analyzing each small clinical study separately. A properly executed meta-analysis involves the verification of a scientific hypothesis, a detailed and clear presentation of the statistical methods used in the meta-analysis, a sufficiently detailed presentation and discussion of the results of the analysis, as well as the conclusions drawn from it. A similar approach provides a reduction in the probability of various errors and allows us to speak about the objectivity of the results obtained. There are two main approaches to performing meta-analysis. The first of them is a statistical re-analysis of individual studies by collecting primary data on the observations included in the original studies. Obviously, this operation is far from always possible. The second (and main) approach consists in summarizing the published results of studies devoted to one problem. All the data obtained from the selected works that fall under the established criteria are summarized, the main characteristics of the studies, the treatment scheme, and the population are highlighted. Next, the collected data is collected, summarized and analyzed. All the data obtained from the selected works that fall under the established criteria are summarized, the main characteristics of the studies, the treatment scheme, and the population are highlighted. All selected studies are evaluated for the risk of systematic error. It should be noted that the stage of determining the circle of studies included in the meta-analysis often becomes a source of systematic errors of the meta-analysis. The quality of a meta-analysis depends significantly on the quality of the original studies and articles included in it. The main problems with the inclusion of studies in a meta-analysis include differences between studies in terms of inclusion and exclusion criteria, study structure, and quality control. There is also a bias associated with the preferential publication of positive research results (studies in which statistically significant results are obtained are published more often than those in which such results are not obtained). Since the meta-analysis is based mainly on published data, special attention should be paid to the insufficient representativeness of negative results in the literature. The inclusion of unpublished results in a meta-analysis also presents a significant problem, as their quality is unknown due to the fact that they have not been peer-reviewed. The choice of the analysis method is determined by the type of analyzed data (binary or continuous). Binary data are usually analyzed by calculating the odds ratio (OR), relative risk (RR) or the difference in risks in comparable samples. All the listed indicators characterize the effect of interventions. The presentation of binary data in the form of OS is convenient to use in statistical analysis, but this indicator is quite difficult to interpret clinically. Continuous data are usually the ranges of the values of the studied characteristics or the unstandardized difference of the weighted averages in the comparison groups, if the outcomes were evaluated in the same way in all studies. If the outcomes were evaluated differently (for example, on different scales), then the standardized difference of the means (the so-called effect size) in the compared groups is used. A necessary stage is the assessment of heterogeneity (statistical inhomogeneity) of research results. To assess heterogeneity, χ2 criteria with a null hypothesis of equal effect in all studies and a significance level of 0.1 are often used to increase the statistical power (sensitivity) of the test. After the completion of all stages, a meta-analysis is carried out directly - obtaining a generalized estimate of the effect size. It is worth emphasizing that only a highly qualified specialist with extensive experience in conducting meta-analysis is able to develop a research methodology and obtain unique information that cannot be gathered when performing traditional literature reviews. The careful formation of criteria for the selection of sources, including the assessment of systematic error, will allow to form a pool of studies for the subsequent statistical processing of the data [1, p.122; 2, p.315; 3, p.603; 4, p.12].

**Conclusion.** Currently, meta-analysis is a dynamic, multifaceted system of methods that allows combining data from various scientific studies in a theoretically and methodologically convincing way. A meta-analysis, compared to a primary study, requires relatively few resources, which allows doctors not participating in research to receive clinically proven information. Since the main condition for the use of meta-analysis is the availability of the necessary information about the statistical criteria used in the reviewed studies. As the availability of such information increases, further expansion of meta-analytic studies and improvement of its methodology will continue.

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