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GUEST EDITORIAL

Are meta-analyses clinically useful?

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As Fleischhacker[1] noted, "Meta-analyses are definitely en vogue" and, clearly, their use has been increasing. For clarification, "Meta-analysis is defined as the quantitative analysis of two or more independent studies to integrate the findings and describe features of the studies that contribute to variation in their results. Meta-analysis in medical research often uses the accumulated evidence about a treatment or procedure to provide guidance to clinicians and to suggest directions for future research."[2] The results of a meta-analysis can be generalized to a larger population and can resolve uncertainty when reports disagree. The question is whether meta-analyses are as clinically useful as their authors claim.

One recent example of this clinical usefulness claim is found in an evaluation of meta-analyses of randomized controlled trials comparing the efficacy of antipsychotics combined with other antipsychotics or other psychotropics vs placebos or antipsychotic monotherapy among adults with schizophrenia.[3] The objective was to summarize and compare the meta-analytically determined efficacy of pharmacologic combination strategies of using antipsychotics in adults with schizophrenia. Correll et al[3] examined various augmentation strategies and concluded, "This overview advances the field by providing a clinically meaningful revision of previous affirmative recommendations for specific combination treatments with antipsychotic drugs among patients with schizophrenia with insufficient symptom responses." The authors continue, "While the quality of the methods of the meta-analyses was generally good/very good, the content lacked quality, suggesting a low evidence level for all combination interventions, except for nonsteroidal anti-inflammatory drugs."[3]

The article is filled with ambiguous or qualifying statements such as the latter. Contrary to the authors' claim, these statements do not provide any clinically useful information. In an accompanying editorial, Fleischhacker[1] brings to light that the authors of this report refute the results of their previous meta-analysis.[4] Fleischhacker[1] suggests that, because large-scale meta-analyses provide a general view of a treatment's

effectiveness and often do so at the loss of clinical details, we should use the combination of information from these meta-analyses and well-controlled individual studies for clinical decision-making. However, I still have not been able to find clinically useful information in Correll et al's meta-analyses.[3,4]

In all fairness, vague, unhelpful statements are common in meta-analyses in various areas of psychiatric research (eg, efficacy of psychotherapies). Some meta-analyses also may bring contradictory results. For example, to date, there are 3 meta-analyses on the efficacy and safety of flibanserin, a new drug for treating hypoactive sexual desire disorder (HSDD) in premenopausal women.[5-7] The first, Gao et al,[5] states, "This meta-analysis indicates that flibanserin to be [sic] an effective and safe treatment for HSDD in women." The second, Jaspers et al,[6] concludes, "Treatment with flibanserin, on average, resulted in one-half additional SSE [sexually satisfying event] per month while statistically and clinically significantly increasing the risk of dizziness, somnolence, nausea, and fatigue." Finally, the third, Saadat et al,[7] concluded that "… the efficacy of flibanserin in women with HSDD was not found to be significantly different compared with placebo." What can anyone conclude from these meta-analyses? Fleischhacker[1] writes about similar situations in the schizophrenia literature, namely the advantages and disadvantages of using oral antipsychotics over long-acting ones.

The discussion sections of these articles evoke the words of Feinstein,[8] who called meta-analysis a statistical alchemy for the 21st century. He noted, "The main disadvantage of meta-analysis… is the removal or destruction of the scientific requirements that have been so carefully developed and established during the 19th and 20th centuries. In the mixtures formed for most statistical meta-analyses, we lose or eliminate the elemental scientific requirements for reproducibility and precision, for suitable extrapolation, and even sometimes for fair comparison."[8] He added, "The idea of getting something for nothing, while simultaneously ignoring established scientific principles, produces an immediate analogy to the alchemy that existed before modern scientific chemistry."[8]

In light of Fleischhacker's words, we need to critically re-evaluate the ambiguity,[1] overuse, and clinical utility of meta-analyses. Authors who tout the clinical usefulness of their meta-analyses should be required to discuss this issue, and clearly describe how the results can guide clinicians in their decision-making. If they are unable to do so, then why should the meta-analysis be published? ■

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