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EDITORIAL COMMENT

Are Guidelines Merely Suggestions?*

John L. Jefferies, MD, MPH,[a,b] Nasrien E. Ibrahim, MD[c,d]

The natural law of inertia: Matter will remain at rest or continue in uniform motion in the same straight line unless acted upon by some external force.

—W. Clement Stone (1)

Clinical or therapeutic inertia is defined as the lack of treatment initiation or the intensification of therapies on par with evidence-based published clinical guidelines to achieve therapeutic goals (2). It is a complicated concept influenced by many factors including those related to the clinician, to the patient, or to the complex medical system in place and is seen in the management of complex chronic diseases such as diabetes, hypertension, and heart failure (HF). Despite advances in the diagnosis and management of HF, the morbidity and mortality associated with this complex disease remain unacceptably high (3), and with continued aging of the population, the incidence of HF is expected to continue to rise (4).

In an effort to curb the morbidity and mortality associated with a diagnosis of HF, clinical practice guidelines have been developed and continue to be updated to serve as roadmaps for clinicians managing patients with such a complex disease (5). Not only is the implementation of such guideline-directed medical therapies (GDMT) essential, the titration of such GDMT to doses achieved in clinical trials is critical and recommended. Trials of angiotensin-converting enzyme inhibitor (ACEI) and angiotensin receptor blocker (ARB) have demonstrated that therapies with low doses of such agents are less effective than therapies with higher doses, with respect to clinical outcomes such as death or HF hospitalization (6,7). Similarly, trials that used higher doses of beta-blockers demonstrated greater effects (8–10).

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Why then, despite published clinical practice guidelines, does the adoption of such therapies with established survival benefit continue to be dismally low and show no significant improvement over the last 8 years? As Greene et al. (11) eloquently demonstrate, in this issue of the *Journal,* in their analysis from the CHAMP-HF (Change the Management of Patients with Heart Failure) registry of patients with chronic HF with reduced ejection fraction (HFrEF), more than one-fourth of eligible patients were not prescribed ACEI/ARB, or angiotensin receptor-neprilysin inhibitor (ARNI); more than one-third were not prescribed a beta-blocker; and more than one-half were not prescribed a mineralocorticoid receptor antagonist. Of even more concern was the observation that, among patients taking such GDMT, less than one-fourth were taking target doses of GDMT established in clinical trials. Indeed, only 1% of patients were simultaneously receiving target doses of ACEI/ARB/ARNI, beta-blocker, and mineralocorticoid receptor antagonist therapy. Furthermore, findings in the current report support the previously described "risk-treatment paradox" (12), where the HF patients at greatest need, such as those with more severe New York Heart Association functional class or recent hospitalization for HF, were less likely to receive appropriate therapy.

Several other trials have demonstrated similar findings of suboptimal uptake of GDMT with known survival benefit in patients with HFrEF (13,14). In a recent analysis by Sangaralingham et al. (14), among eligible HFrEF patients, following the approval of sacubitril/valsartan by the U.S. Food and Drug

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From [a]The Heart Institute, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; [b]University of Cincinnati College of Medicine, Cincinnati, Ohio; [c]Cardiology Division, Massachusetts General Hospital, Boston, Massachusetts; and the [d]Harvard Medical School, Boston, Massachusetts.
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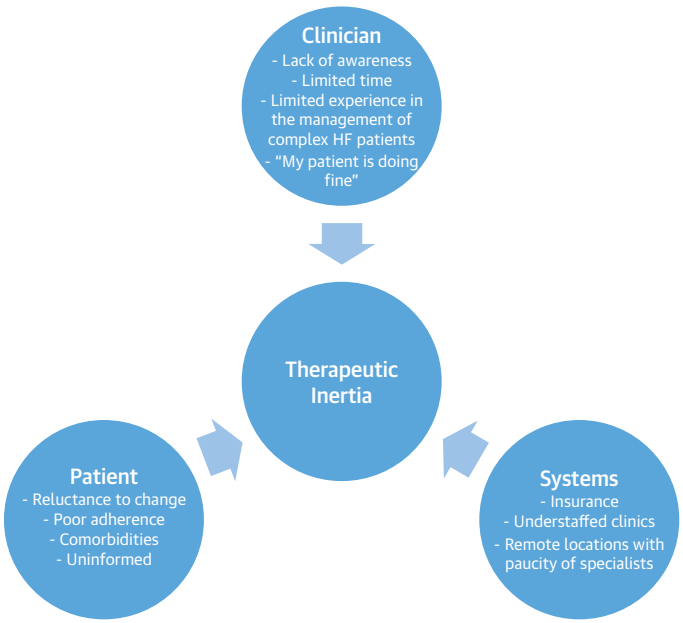
FIGURE 1 Therapeutic Inertia With Clinician, Patient, and Systems Input



Administration, <3% of patients were prescribed sacubitril/valsartan. Fonarow et al. (15) demonstrated that a practice-specific performance improvement intervention using GDMT for HF was associated with substantial improvement in GDMT in eligible outpatients with HF.

Efforts to improve uptake of GDMT among patients with HFrEF should be aimed at the clinician, the patient, and the system factors that contribute to clinical or therapeutic inertia. Just as matter will remain at rest or continue in uniform motion in the same straight line unless acted upon by some external force, the morbidity and mortality associated with HFrEF will not improve unless patients are optimized by GDMT.

Expert consensus documents such as the one developed by Yancy et al. (16) to answer pivotal questions related to the management of outpatients with HFrEF provide easy-to-implement algorithms that can be applied by both primary care and cardiovascular clinicians to the complex care of HFrEF patients. In the current era of smartphone applications, the American College of Cardiology has developed an application to accompany the expert consensus document (17), providing convenient access for busy clinicians to such guidelines and suggestions for how to improve GDMT. Documents and applications such as these should be developed and updated regularly as HF therapeutics evolve to serve as Cliff Notes (John Wiley & Sons, Hoboken, New Jersey) and pocket guides to which clinicians can refer and ensure patients are taking appropriate GDMT.

Although clinical or therapeutic inertia is influenced by clinicians and potential reluctance to implement novel therapies if their patients are "doing fine," factors, such as a patient's individual reluctance to change, potential nonadherence, comorbidities such renal or pulmonary disease that prohibit concomitant use of certain GDMT, and cost, also influence the rate of uptake of GDMT in patients with HFrEF. Also, we cannot forget about system factors, such as insurance companies that make prescribing novel therapeutics challenging, not enough HF physicians to manage the increasing population of HF patients, lack of staff needed to assist in the monitoring of patients after implementation of GDMT, and lack of specialists in more remote parts of the country; all of which play important roles in poor adherence to GDMT.

Can things get better? If we can address the clinician, patient, and system factors that are modifiable (**Figure 1**), we can improve the implementation of GDMT and, in turn, reduce the morbidity and mortality associated with HF. Like national efforts aimed at reducing HF readmissions despite the controversy,

institutional task forces should be developed to increase implementation of GDMT. If patients understood the guidelines, if they knew the survival and quality-of-life benefits they could attain from adhering to GDMT, the uptake of such therapies would improve. In addition, patients are their own best advocates and should be encouraged to have a more active role in the treatment of this complex disease, and no, just as stop signs are not merely suggestions for drivers at intersections, neither are published guidelines for clinicians managing HF patients.

ADDRESS FOR CORRESPONDENCE: Dr. John L. Jefferies, the Heart Institute, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, MLC 2003, Cincinnati, Ohio 45229. E-mail: john.jefferies@cchmc.org. Twitter: @CincyChildrens, @CincyMedicine, @MassGeneral, @MGHHeartHealth.

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