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Improving Adherence Among HF Patients: A Look at the PROMPT-HF Trial

**Dr. Butler:**
The Pragmatic Trial of Messaging to Providers About Treatment in Heart Failure, or the PROMPT-HF trial, was designed to test the hypothesis that tailored and targeted electronic health record alerts recommending GDMT, or guideline-derived medical therapy, for patients with heart failure would result in greater adherence to medication use. So was their hypothesis proven to be true? Well, we'll find out in today's discussion as we review the study's key findings.

Welcome to *Heart Matters* on ReachMD. I am Dr. Javed Butler. And joining me today to discuss the PROMPT-HF trial is Dr. Tariq Ahmad, who is the Director of the Heart Transplant and Mechanical Circulatory Support Program and Chief of Heart Failure at the Yale University School of Medicine. He is also an author of this study and presented its finding at the 2022 American College of Cardiology Annual Scientific Meeting.

Tariq, welcome to the program.

**Dr. Ahmad:**
Thank you so much, Dr. Butler. I'm honored to be here.

**Dr. Butler:**
Great. So let's jump right into it. What is the problem that you were facing that you were trying to solve with this trial?

**Dr. Ahmad:**
So we know that heart failure with reduced ejection fraction, which is a subtype of heart failure, is a major medical issue in both United States, Western Europe, and frankly, the rest of the world. We've come up with really good medications for these patients. There are what we call guideline-directed medical therapy, GDMT, that you mentioned, and the 4 pillars of GDMT are beta blockers, ACE, ARB or ARNI, MRA, and SGLT2 inhibitors. What we know from numerous studies published is that the vast majority of patients who qualify for these medications that we know would benefit medically from these medications are not on them. So we felt that one of the promises of the electronic health record was that you could use data on patients to identify those that are not on appropriate therapies and then, perhaps, come up with a way to get their clinicians to get them on the right therapy, and that was the basis of PROMPT-HF.

The hypothesis was that by essentially prompting physicians, if you will, we will be able to remind them of the medications that patients should be on, and those physicians who were reminded of this would prescribe these appropriate medications leading to more patients in the intervention arm that we talk about being more likely to be on appropriate guideline-directed medical therapy.

**Dr. Butler:**
What you're telling me sounds pretty important, but how much of a problem is this? Is this that people are right now 85, 90% of the people are getting GDMT but not a hundred percent? What is the gap here that you're trying to solve?

**Dr. Ahmad:**
So when I round with the house staff and I ask them this question, they give me answers like 80% or 90% because you have these medications that have very few side effects that cause dramatic improvements in clinical outcomes. You would expect that the vast majority of patients who qualify would be on them. If you look at registry data, what we find is, perhaps, even less than 5% of patients are on the right doses of these appropriate medications. Now, SGLT2 inhibitors are a relative newcomer to this regimen, and I would guess that, perhaps, way less than even 5% of patients are on all 4 of these medications, which shows that we have a long way to go.

**Dr. Butler:**
For those just joining us, you're listening to *Heart Matters* on ReachMD. I am Dr. Javed Butler, and I'm speaking with Dr. Tariq Ahmad about the PROMPT-HF trial and its findings.

**Dr. Butler:**
So before I ask you about your trial design, I assume that part of your hypothesis is that clinicians are just busy, and these are not clinical reasons for which the therapies are not given. Or is the main reason for the lack of use basically intolerance and complications and side effects and contraindications?

**Dr. Ahmad:**
That's an excellent question. I think it's a combination of everything. So there are certainly a percentage of patients who don't tolerate these medications, so they're either stage C transitioning to stage D heart failure, or they truly have endstage heart failure where their only therapies that would help them are transplant or LVAD, but if you take that patient population away, I would imagine it's a significant but minority of those patient populations. The majority of patients who are not getting these therapies are those who medically have no reason why they should not be on it, but there are other reasons, such as inertia, or they're just not seeing their physicians in time or there may be issues with physicians not knowing what comprises the guideline-directed medical therapy. As we have seen from the data, the majority of patients with heart failure with reduced ejection fraction are not even seen by cardiologists. So there are major gaps in therapies that prevent these patients from being on the right therapies.

I mean, there was a provocative paper not too long ago that showed patients who qualified were getting defibrillators, despite the majority of those patients were not on appropriate medical therapies, which are a fraction of the cost of a defibrillator. So certainly, there are other issues with our medical enterprise that are not rewarding the behavior that leads to patients being on appropriate medical therapy versus other therapies that bring questions of reimbursement in mind.

**Dr. Butler:**
So, Tariq, that's really important what you just said because it sounds like your intervention is not only about reminding people but also in a way sort of educating people who may or may not know about the latest guidelines. So with that said, can you just tell us a little bit about your study design and how you intervened?

**Dr. Ahmad:**
Absolutely, Javed. So, we identified the top hundred clinicians within our health system, which is one of the largest integrated academic health systems in the country, to be part of this study. The consent was done entirely through the Epic EHR, which is the most common EHR in the country. The consenting physicians had to fill out a survey about the training process there and 20 questions about their knowledge base about guidelines in heart failure. Then we cluster-randomized at the level of the clinician. When a patient saw this clinician who was in the study and met the criteria—that was age greater than 18, LVEF less than or equal to 40, and they were not on all 4 pillars of guideline-directed medical therapy—they were automatically enrolled in the study. The physicians were randomized to getting the alert, saw an alert when they were putting in orders in the outpatient setting. The alert was tailored to the individual patient, so it said it had patient information that we take into account when we're prescribing medications, like blood pressure, heart rate, creatinine levels. It told the clinician which medications the patient is on and which ones they're not on, and then they had an order set specifically for the medications that the patient was not on and the primary outcome was a change addition in an additional GDMT class at time 30 days.

**Dr. Butler:**
And what did you find?

**Dr. Ahmad:**
Our findings were quite impressive because we had an 18% increase in the number of GDMT classes added in the no-alert or usual care arm and a 25.7% in the alert arm, which was significant at a level of 0.01, and the number of patients needed to alert to add an additional GDMT class, not just additional dosage, but an addition class was only 14.

**Dr. Butler:**

So this is really important. Now do you think that this could be scaled to nonacademic medical centers or smaller rural counties that uses electronic health record?

**Dr. Ahmad:**
Absolutely, Javed. This would be very easy to do at any electronic health record. In fact, we're looking to expand to other large health systems that are not academic, and I don't see any reason why we should not be able to do this in every health system that has Epic.

I would suspect that the impact would be greater in health systems where they're not as aligned with academic health systems where the information from the guidelines to the bedside might be taking a little longer, but that's something that needs further study.

**Dr. Butler:**
Well, you have certainly gotten me excited, and I'm definitely going to be looking forward to your ongoing efforts and what comes next. This was certainly a very interesting study with some promising results, and I would like to thank you, Tariq, for sharing your thoughts and your findings. It was absolutely great speaking with you today.

**Dr. Ahmad:**
Thank you so much, Javed. honor.

**Dr. Butler:**
Absolutely. For ReachMD, I am Dr. Javed Butler. To access this and other episodes in our series, visit ReachMD.com/HeartMatters, where you can Be Part of the Knowledge. Thanks for listening.