Managing Heart Failure: Implications of Guideline Changes for Clinical Practice

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INTRODUCTION

Within this framework—the aging population, increasing prevalence of HF and comorbid conditions, polypharmacy and the concomitant challenges for patient management, and continuing poor prognosis—two recently approved pharmacotherapies could improve quality of life (QoL) and help reduce hospitalizations for patients with HF with reduced ejection fraction (HFrEF).

This live and on-demand activity was designed to inform nurse practitioners of patient selection criteria, dosing, and practical considerations for use of valsartan/sacubitril, an angiotensin receptor neprilysin inhibitor (ARNI), and ivabradine, a sinoatrial node inhibitor. It also reinforced use of Guideline Directed Medical Therapy and assisted the provider in devising strategies that promote treatment adherence.

Start and End Date: 2/25/2019 -3/1/2020

OBJECTIVES

- Describe the role of diagnostic and prognostic biomarker testing for individuals with, or at risk for, heart failure (HF)
- Differentiate pharmaceutical treatment recommendations for HF with reduced ejection fraction (HFrEF) and HF with preserved ejection fraction (HFpEF)
- Review recommendations for newer classes of medications
- Identify strategies to improve adherence to treatment regimens

OUTCOME METHODS

Educational outcomes data assessing learners' knowledge, confidence and competence were obtained pre/post activity as well as 60-days after activity completion.

- Total records = 3,098 (pre/post/eval) and 49 (follow-up)
- Follow-up results also reported using descriptive statistics (n=49). 37 of the 49 follow-up respondents see patients with HF.
- A paired analysis of pre/post results was conducted. These data were filtered to include only learners who treat patients with HF (n=1,717).

EXECUTIVE SUMMARY PRE/POST

Knowledge increased significantly:

- Overall, 49% increase in correct answers to 4 knowledge/case questions from pre (61%) to post (91%) with a large effect size (Cohen's $d = 1.47$).
- Most notable increase in knowledge: a 122% increase in knowledge that treating a specific patient with ivabradine twice daily is a guideline-based therapy to help reduce HF hospitalizations.

Confidence in the use of each of 5 patient care strategies increased significantly:

- Strategies included biomarker testing to assess HF severity and to identify patients at risk of HF, initiating ARNI and ivabradine therapies, and promoting adherence.
- While all changes were large, the greatest increase: 60% increase in mean confidence rating out of 5, from pre (2.22) to post (3.56), with a large effect size (Cohen's $d = 1.48$) for "initiating ivabradine for HF with reduced ejection fraction."
- For each of the 5 strategies, learners who increased their confidence rating from pre to post (an average of 77% across the strategies) see a combined total of 14,806 to 16,998 patients with HF each week, depending on the strategy.

Current (pre) to planned (post) use of biomarker testing increased significantly:

- Overall mean 2.8-fold (179%) increase in "always" use of biomarker testing for screening and/or diagnosis of HF from current use (pre) to planned use (post), with a large effect size for the mean scores/5 (Cohen's d=0.88).
- Those who plan to use biomarker testing more often (61% of those seeing patients with HF) see/treat a combined total of 12,702 patients with HF each week.

LEARNER DEMOGRAPHICS

Total Actual Unique Learners [Live & On-Demand]

Total Learners	Nurse Practitioner	Nurse/NP student	Other APRN	Other not listed
4936	91.3% N=4510	6.7% N=333	1.4% N=69	0.5% N=24

Breakdown of practice setting [Live & On-Demand]

Total Learners	Primary care	Internal medicine	Acute care	Cardiology	Other not listed
4931	41.4% N=2043	8.7% N=432	10.7% N=531	13.5% N=669	22.5% N=1109

Primary NP Certification [Live & On-Demand]

Total Learners	Primary care	Internal medicine	Acute care	Cardiology	Other not listed
4931	41.4% N=2043	8.7% N=432	10.7% N=531	13.5% N=669	22.5% N=1109

PRE TO POST CONFIDENCE CHANGE

Pre to Post ENDURING [Paired Data]

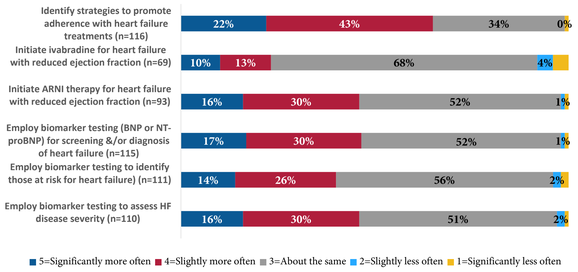
Confidence level	N	Group	Mean	% Change	Effect Size
Employing biomarker testing to assess HF disease severity	1,717	Pre	2.84	↑ 38.7%	1.34
		Post	3.94		
Employing biomarker testing to identify those at risk for heart failure	1,717	Pre	2.94	↑ 36.1%	1.22
		Post	4.00		
Initiating ARNI therapy for heart failure with reduced ejection fraction	1,717	Pre	2.58	↑ 44.6%	1.25
		Post	3.73		
Initiating ivabradine for heart failure with reduced ejection fraction	1,717	Pre	2.22	↑ 60.4%	1.48
		Post	3.56		
Identifying strategies to promote adherence with heart failure treatments	1,717	Pre	2.97	↑ 34.3%	1.28
		Post	3.99		

Pre to Post LIVE [Paired Data]

Confidence level	N	Group	Mean	% Change	Effect Size
Employing biomarker testing to assess HF disease severity	827	Pre	3.43	↑ 25.4%	0.87
		Post	4.30		
Employing biomarker testing to identify those at risk for heart failure	827	Pre	3.15	↑ 38.1%	1.16
		Post	4.35		
Initiating ARNI therapy for heart failure with reduced ejection fraction	827	Pre	2.53	↑ 50.2%	1.12
		Post	3.80		
Initiating ivabradine for heart failure with reduced ejection fraction	827	Pre	2.04	↑ 73.5%	1.34
		Post	3.54		
Identifying strategies to promote adherence with heart failure treatments	827	Pre	3.14	↑ 35.4%	1.18
		Post	4.25		

FOLLOW-UP RESULTS

Follow-up: Over the past 60 days, how often have you utilized the following strategies compared to before completing the activity. Live & On-Demand



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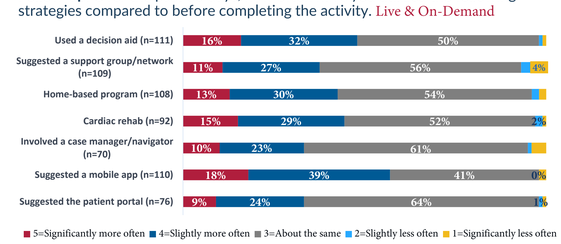

PATIENT OUTCOMES - OBSERVED

Please describe at least one patient outcome you have observed based on you new or increased use of any of the patient care strategies listed in the previous question

On-Demand

- Improved physical mobility and energy. More emotional support an adherence with meds.
- Better management of signs and symptoms
- Increased diuretic therapy when BNP did not respond to initial diuretic approach
- Decreased symptoms
- Pt's adherence to medications, dietary restrictions, daily weight monitoring
- I'm more aware of possibility if HF diagnosis so I screen more often and consult HF NP
- Improved symptoms of exacerbation with adding aldactone to patient case with reduced EF
- Less CHF exacerbation (less edema/dyspneic episodes)
- HF symptoms got better.
- Less readmissions
- I have added aldactone to the HFpEF patients and been more aggressive about adding bidil. Better QOL
- Initiated more ARNI's to those patients that have had all other medication regimens initiated in the hospital. Transitioned over in the office

Live

- A good candidate for ARNI therapy was identified and the medication was initiated.
- A patient pharm non-compliant finally had a horrific episode was resistant to meds before is now 90% compliant
- African American female 78y/o with repeated admissions and ER visits has decreased such to only 1 in the last 60 days versus 8 in the previous 60 days.
- Heart muscle recovery
- One of the patients I put on the ARNI has not had another admission for HF in 2 months. This was a patient going to the hospital every month.
- Reduced bounce back hospitalization
- Started a patient on ARNI, and her shortness of breath resolved.
- The patient had great improvement with slightly higher diuretics and ARNI added on and went to cardiac rehab

In the last 60 days, for how many patients with HF have provided improved or more evidence-based care directly because of the CE activity?

ON-DEMAND
Positive Patient Impact within 8 weeks for 36 NPs

Statistic	Follow-up
SUM	544 pts
Mean # of pts	15.1, SD=27.5
Most frequent responses	0 pt (n=7) 15 pts (n=5)
Minimum	0 pts (n=7)
Maximum	150 pts (n=1)
N	36 who see pts

LIVE
Positive Patient Impact within 8 weeks for 89 NPs

Statistic	Follow-up
SUM	714 pts
Mean # of pts	8.0, SD=11.3
Most frequent responses	5 pts (n=14)
Minimum	0 pts (n=10)
Maximum	60 pts (n=1)
N	89 who see pts

ACKNOWLEDGEMENT

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